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SPECIAL ARTICLE.

THE TUBERCULOSIS PROBLEM IN AUSTRALASIA.

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ARTICLES on the crusade against tuberculosis in New South Wales and New Zealand have already appeared in this Journal,¹ but none, I think, have dealt with the problem as it exists in Australasia as a whole.

Climatic and other Considerations.

The climate of Australia is for the most part semi-tropical, and actually tropical in the northern part of the island continent. Practically there are but two seasons—a summer of eight months, and a winter of four months' duration. In summer the atmosphere is highly charged with watery vapour on the eastern and northern seabards, but is dry and light on the mountains and tablelands. The southern and western parts of the continent are less affected by the moist north-east winds, and consequently the air is drier there than on the east coast. The winter's cold is never very severe, except for a few weeks in the southern part of Tasmania and on the mountains. Snow is never seen in the lowlands.

¹ Armstrong, W. G.: "The Control of Tuberculosis in Australia," *BRITISH JOURNAL OF TUBERCULOSIS*, vol. i., No. 2, p. 115, April, 1907; Mason, J. M.: "The Attitude of New Zealand towards Consumption," *ibid.*, vol. i., No. 4, p. 281, October, 1907. See also "Tuberculosis among Children in New Zealand," by Dr. J. Malcolm Mason, in "Tuberculosis in Infancy and Childhood," p. 246. London: Baillière, Tindall and Cox. 1908. Price 12s. 6d. net.

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In New Zealand the climate in the North Island is very much the same as that of New South Wales; in the South Island it is like that of England, but less severe in the winter, and freer from fogs.

"The soils of Australia are variable. Along the coast-belt and for about 200 miles inland they are largely such as result from the decomposition of slate and granite, with large patches of black and chocolate soils, due to the decay of basaltic lavas. Inland from the coast-belt the soils are mostly sandy, with, in some places, a large quantity of nodular lime or iron.

"The soil of the North Island of New Zealand is chiefly volcanic. In the South Island the soils are gravelly and sandy on the plains, whilst in the Alpine regions they are such as result from the decomposition of slate, gneiss, granite, and sandstone, etc." (Edgeworth David).

The trees and shrubs of Australia are for the most part evergreen. Eucalypti abound, and the landscape, although somewhat monotonous, never bears that desolate, leafless appearance presented in winter in Northern climes. The rainfall, although sufficient if it were conserved, is irregular, and the land is subject to droughts, which sometimes last for several months.

The area of Australia is twenty-six times that of Great Britain and Ireland, but the population at last census (1906) was only 4,119,481, The area of the Dominion of New Zealand is 104,491 square miles, and the population 908,726, exclusive of the Maoris, who number 47,731, but are, like the aborigines of Australia, steadily diminishing. More than a fourth of the whole population, both in Australia and New Zealand, live in the chief cities, which are situated on the seaboard.

The Anti-Tuberculosis Movement.

As in the United States of America, so here in Australia the Federal Government takes no part in the crusade against tuberculosis. Each State has its own Health Act, and makes its own regulations for the control of the disease.

The tuberculous provisions of the New Zealand Health Act (1900) are operative throughout the whole of the islands which constitute the Dominion, which has a Minister of Public Health—an advantage not possessed by any of the States of the Commonwealth, except Victoria.

In Australasia, as elsewhere, tuberculosis still destroys more lives than all the epidemic diseases put together; nevertheless, the death-rate has been steadily falling, especially during recent years, and it is now about 25 per cent. lower than in England and Wales. New Zealand claims to have the lowest death-rate for consumption in the world—namely, 7·79 per 10,000 living.

Compulsory notification of consumption, both by the occupier of the house in which the patient lives and by the doctor in attendance, is in force in New Zealand and in all the States of the Commonwealth. The operation of the regulation, however, is, as might be expected in so sparsely-populated a country, limited to certain defined places. Thus, in New South Wales it applies to the city of Sydney only, and in Victoria to Melbourne and thirty-two provincial districts. In New Zealand notification is compulsory throughout the whole of the Dominion.

Municipal by-laws prohibiting spitting on the side-walks and in public conveyances exist in all the States of the Commonwealth and in New Zealand, but are, as a rule, only enforced in large centres of population. Notices pointing out the dangers of indiscriminate spitting are posted in public places, in trains and trams, and there has been a marked diminution in the practice during the last few years.

The bacteriological examination of the sputum of suspected consumptives is made by the Health Boards in all the States and in the Dominion.

Inspection and Disinfection of Consumptives' Dwellings.

In the cities of Sydney, Melbourne, and Adelaide, and in New Zealand, the premises occupied by notified consumptives are, unless the medical attendant thinks it unnecessary, systematically inspected and disinfected free of charge. In other places, where notification is not compulsory, disinfection is carried out by the health authorities whenever requested by the occupants of the house. In the States there is no compulsory removal of a consumptive, or any interference with his liberty to change his residence or to travel.

In New Zealand indigent consumptives from oversea are not allowed to land, and the master of the ship is compelled to take the invalid back to the port from which he sailed. Advanced cases, even if possessed of means, must enter into a bond, if required, to reside in a sanatorium at their own expense.

Anti-Tuberculosis Literature and Lectures.

Distribution of pamphlets relating to anti-tuberculosis measures is made more or less freely in the chief cities, and popular lectures are occasionally given, but there is still much to be desired in this direction. At the request of the New South Wales branch of the National Association for the Prevention of Consumption, leaflets on the nature and prevention of the disease are distributed to the elder children in the State schools, and the head-teacher explains these on stated occasions.

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Medical Inspection of Schools and the Teaching of Hygiene.

In New South Wales this is confined to the metropolitan area and to Newcastle. Two doctors are engaged in this work in Sydney, and one in Newcastle. Recently an inspector has been appointed in South Australia. In Tasmania a course of lectures on school hygiene is delivered in Hobart. In New Zealand inspection is carried out in all the public schools, but there is no systematic teaching of hygiene. To save the inspectors' time and enable them to visit all the schools, the teacher, both in New South Wales and New Zealand, sorts out those children who exhibit any manifest abnormality or delicacy, and they only are examined by the doctor. Before, however, any child's name is placed on the list, the consent of the parent or guardian has to be obtained to the examination.

Tuberculosis Dispensaries.

There are no tuberculosis dispensaries in Australia or in New Zealand, but the need of them for the detection and supervision of cases and as distributing centres is fully recognized. In Victoria and in New South Wales it is proposed to set apart observation wards in the large hospitals. Here a classification of the patients and much of the work of a tuberculosis dispensary will be carried on. In some of the States trained nurses are employed in metropolitan centres to visit, advise, and help indigent consumptives.

Bovine Tuberculosis.

Cattle-testing for tuberculosis and the inspection of slaughterhouses and dairies is not in as advanced a state as could be desired. There are no special provisions in the Health Acts of Tasmania and Queensland against the contamination of meat and milk with tubercle, but in all the States leaflets are issued pointing out the danger of infection from the consumption of tuberculous meat and milk, and recommending that all the milk should be thoroughly scalded, and all the meat thoroughly boiled or roasted. In Western Australia the Board of Health has power to condemn and remove from dairy herds all cows reacting to the tuberculin test, also to order the removal of tuberculous glands from carcasses, which are then allowed to go into consumption. Legislative enactments in South Australia, Victoria, and New South Wales make it illegal to sell diseased meat and milk, to employ persons in a dairy who are suffering from tuberculosis or any other infectious disease, also to neglect to report the existence of an infectious disease on the premises. They also empower the authorities to enter any suspected premises and to destroy diseased carcasses. The Dairies Supervision Act of New South Wales (1901) makes an annual registration of dairy herds compulsory. The New

Zealand Health Act (1900) empowers the District Health Officer or a Stipendiary Magistrate to inspect, and if necessary to seize and destroy, all kinds of food, including, of course, milk and meat, found to be unfit for human consumption.

Sanatoria for Consumptives.

These are of two kinds—public and private. The former are for the destitute, or those whose means are insufficient to enable them to pay the charges in a private sanatorium, which amount to four or five guineas a week. In most of the public sanatoria some beds are set apart for patients who pay twenty or thirty shillings a week. The public sanatoria are supported either entirely by the State or partly by the State, with the aid of public subscription. No palatial structures like many of the sanatoria erected in Europe and America are to be found in Australasia. The propriety of erecting such in any country is questionable, and to do so in the mild climate of Australasia, in which it is practically possible to live in the open air almost all the year, would be a waste of money. With some exceptions, the buildings are of wood, with galvanized iron or tiled roofs. These are arranged generally in much the same way as in other lands—that is to say, there is a central administrative block and ward wings, connected by a corridor with châlets or shelters ranged around. The wards usually contain six or eight beds. In the private sanatoria each patient has a room to himself. The châlets are for one patient only in the sanatoria for men; they are usually double in women's sanatoria. Electric bells, acetylene gas, and hot and cold water are provided. For the most part our sanatoria are situated at an elevation of some hundreds or thousands of feet above sea-level. In these localities the patients do not suffer from the moist heat of the coastal districts referred to in a previous part of this paper; the air is dry, light, and much cooler than it is at lower levels. Unlike Europe and America, it is great heat, and not intense cold, with which we have to contend. Such cold winds as we have in winter come from the south and west, and our sanatoria are built so as to face the north-east.

The ordinary routine of a sanatorium in Australasia as to meals, exercise, rest, and the like is much the same as in England.

A brief description of our sanatoria for early and possibly curable cases may now be given. The homes or hospitals for advanced and incurable cases will be mentioned separately.

Tasmania has one semi-public sanatorium at Newtown, near Hobart, founded by certain philanthropic citizens and subsidized by the State. The buildings are light wooden châlets, and accommodate eight patients. Each patient is given a flower-garden to attend, but the place is too small to provide other suitable kind of work. There

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is one private sanatorium at Campbelltown, in the middle of the island, with six beds.

Queensland has one public sanatorium at Dalby, 1,500 feet above sea-level, with twenty-eight beds. The building is "a very simple one, more like a large verandah"; but the patients are said to do as well as when housed in more pretentious buildings. There are no private sanatoria.

Western Australia has a public sanatorium at Coolgardie, some 300 miles distant from Perth, the capital city. It has sixty beds, and patients are admitted at the discretion of the principal medical officer. There are no private sanatoria.

South Australia has one public sanatorium at Kalyra, with fifty-three beds, eleven of which are free and maintained by the State. The rest are for patients who pay from twenty to forty shillings a week, according to the accommodation required. The buildings are of stone. There is one private sanatorium, situated in the Mount Lofty Ranges, seven miles from Adelaide, and at an altitude of 1,050 feet. It is a stone building.

Victoria has three public sanatoria, conducted by the State Government. One is Greenvale, at Broadlands; another is in the form of an annexe to the Amhurst Hospital; and the third is an annexe to the Daylsford Hospital. There are ninety beds at Greenvale, thirty at Amhurst, and ten at Daylsford. Men only are received at Greenvale, women only at Amhurst and Daylsford. Greenvale is thirteen miles north of Melbourne and 500 feet above sea-level. The estate is 340 acres in extent, the buildings are of wood, with a central administrative block, and ward wings with ten beds in each. In addition, about sixty patients are accommodated in tents made of wooden frames covered with canvas, floored and ceiled with soft wood. A large proportion of the canvas walls is always open, so that the patients practically sleep in the open air.

There are two small private sanatoria, conducted by medical practitioners, with forty beds in all.

In *New South Wales* there are two public sanatoria for early curable cases. Both have a resident medical superintendent. One is situated at King's Tableland, Blue Mountains, and is for men only; the other is at Thirlmere, on the Great Southern line of railway, and is for women only. Both institutions are the outcome of a movement made in 1897 to commemorate the Diamond Jubilee of the late Queen Victoria. The money then contributed has been partly expended in the purchase and erection of the above-mentioned institutions. The interest of the balance is applied to the maintenance of the sanatoria, which are also supported by public subscription and State grants. They are called "The Queen Victoria Homes for Consumptives."

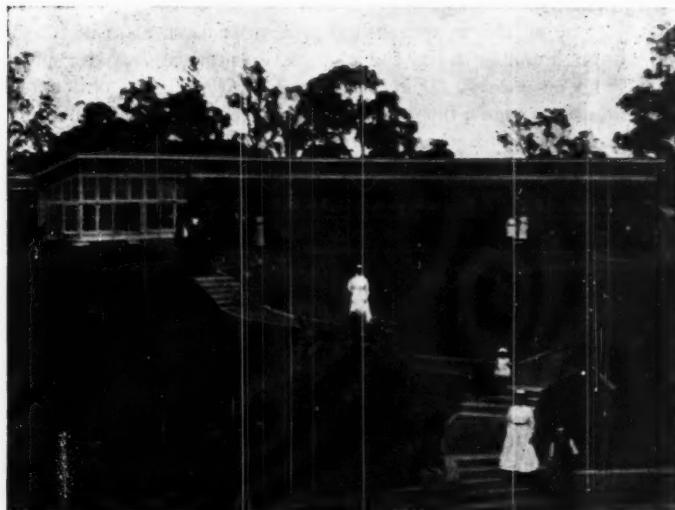
Eleven beds are supported by annual contributions of £50 each, collected in as many suburban municipalities or country towns. Two grand lodges also contribute £50 each yearly, to support a bed. In addition, there are six beds endowed in perpetuity by gifts of £1,000, five of them from private individuals and one from the residents of two municipal districts.¹ Applicants for admission must have been residents of New South Wales for at least one year. No charge for admission is made, but patients or their friends are expected, if able, to contribute to the support of the institution. There is in both sanatoria a wing containing six single bedrooms, which was built and furnished at the sole cost of Mr. and Mrs. Hugh Dixson, with the object of providing sanatorium treatment for a class of persons who, although unable to pay the charges in a private sanatorium, do not wish to be entirely dependent upon charity. These patients pay thirty shillings a week, but beyond having separate bedrooms and a separate dining-table, are in all respects treated in the same way as the non-paying patients.

At *King's Tableland*, which is sixty-one miles from Sydney and four miles from the nearest railway-station, there are 960 acres of forest-land, and belts of pine-trees, as well as the rising ground at the rear of the buildings, shelter them from the south and west, the quarters from which cold winds and rainstorms come. The elevation is 2,800 feet above sea-level. The buildings, which face the north-east, are of wood on stone piers, are lined with steel painted to a glaze finish, and roofed with red tiles. There is a central administrative block, containing nurses' quarters, dining-room, and kitchen, with other offices, and on either side of it, arranged in arc form, are the wards which have been added from time to time. There are six wards with six beds in each, two wards with a single bed in each, and two wards with two beds in each. There are also twelve one-bed shelters ranged in front of the wards. The medical superintendent's cottage is at a short distance from the patients' quarters, and commands a view of them. The wards are fitted with casement windows opening outwards, and the proportion of window to wall-space is rather more than one-third.

The administrative block and the wards are connected behind by a corridor, into which they open. The supply of water is from a constant spring, and is pumped up to an elevated reservoir. Acetylene gas is the illuminant, and a septic tank, with filter-beds, deals with the sewage, the effluent being used to irrigate the kitchen-garden. There are fifty-four beds, and about 130 patients pass through the institution in a year.

¹ Since this paper was written, another bed has been endowed in perpetuity.

Thirlmere Sanatorium is fifty-seven miles from Sydney, two miles from the nearest railway-station, and 1,000 feet above sea-level. It provides for fifty patients. There are 304 acres of land. The aspect is north-east, and the ground rises rapidly at the back of the main building, which is of brick, and was erected about twenty-five years ago as an asylum for consumptives, but has been practically reconstructed and brought up to date. The new buildings, consisting of doctor's cottage, nurses' quarters, and a long crescent-shaped *Liege-halle*, etc., are at the rear of the main building, with which they



LIEGEHALLE AT THIRLMERE SANATORIUM, NEW SOUTH WALES.

are connected by a long steel and concrete bridge. They are brick structures. The bridge also minimizes the stairs trouble. There are two pairs of wooden châlets, each accommodating two patients, and others are about to be erected. The internal walls of all the buildings are finished in fine-faced cement, ready for enamel-painting. All angles are rounded and all woodwork finished with the plainest surfaces. The water-supply is from the Picton Works, and is pumped up by an oil-engine to two large tanks on the summit of the hill behind the buildings. Hot water is laid on from a boiler in the basement. The lighting is by acetylene gas. The drainage system connects to a septic tank, with the exception, of course, of the sterilized drainage. A system of telephonettes from the nurses'

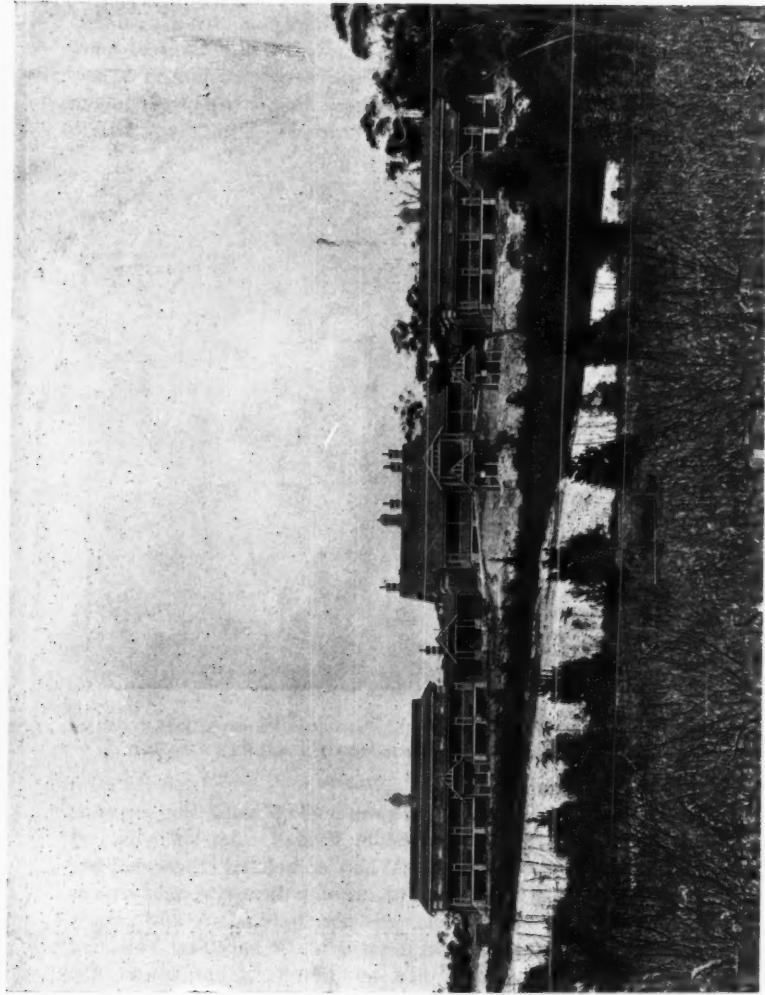
charge-room in the main building communicate with the doctors' cottage and the nursing staff's cottage.

A third sanatorium—"Oberlin"—"for cultured, but poor, consumptives of both sexes," has been built, and was recently opened at Hazelbrook, on the Blue Mountains, fifty-five miles from Sydney, and 2,210 feet above sea-level. One hundred and fifty acres of land were purchased some years ago and laid out in gardens and walks. Pine-trees were planted in large numbers amongst the virgin forest trees, and with the rising ground at the rear of the buildings afford



STEEL AND CONCRETE BRIDGE AT THIRLMERE SANATORIUM CONNECTING MAIN BUILDING WITH NEW BUILDINGS ON HIGHER GROUND.

sufficient shelter from the south and west. The institution owes its origin to the beneficence of the late R. T. Hall, who left sufficient money to build and maintain it. When completed, there will be accommodation for sixty patients; at present there are only sixteen beds. The buildings are of brick, on stone foundations, and consist of a central administrative block, a ward block on either side, and four wooden one-bed shelters. In addition to other wards, the intention is to build a social block for each sex. The windows for the most part are casements pivot-hung vertically, and they can be removed entirely if required. Other windows are of the "Austral" type. Each patient has a room to himself, and hot and cold water

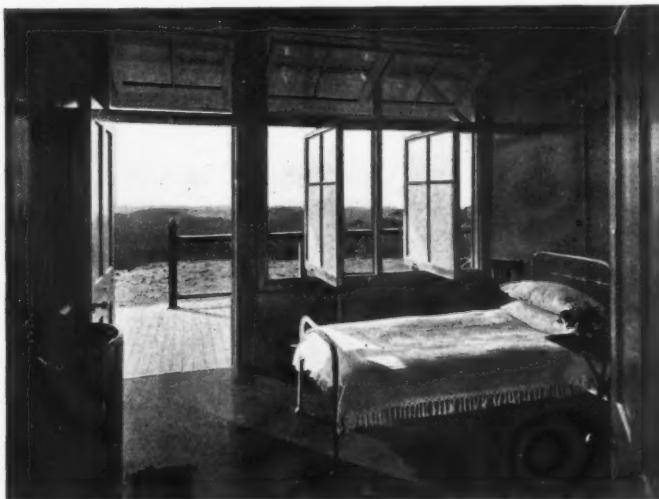


"OBERLIN" SANATORIUM, NEW SOUTH WALES : FRONT VIEW SHOWING CENTRAL ADMINISTRATIVE BLOCK, WARD BLOCK, AND THREE SHELTERS.

TUBERCULOSIS PROBLEM IN AUSTRALASIA II

are provided. Electric power is installed both for working the machinery in the laundry and lighting the buildings and gardens. There is an abundant water-supply, and septic tanks with continuous filters deal with the sewage. The cost per bed was £250.

There are two private sanatoria in the State for paying patients. One is superintended by and is the property of Dr. McIntyre Sinclair, and is situated at Wentworth Falls, about two and a half miles from King's Tableland Sanatorium. The buildings face the north-east, and command a very extensive view of the mountain range and the distant

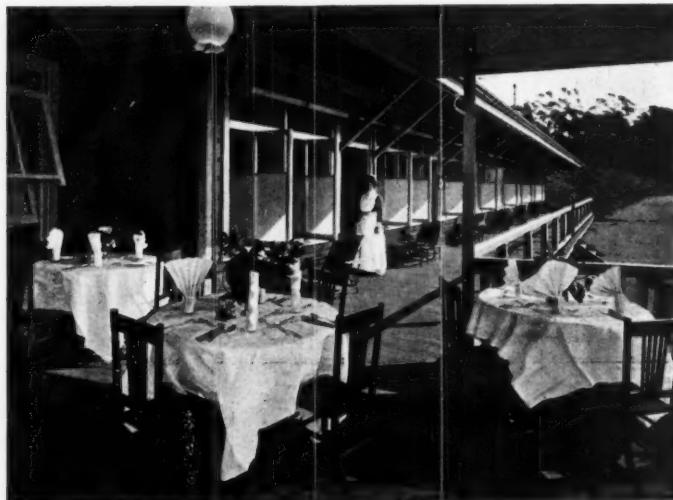


BEDROOM IN DR. MCINTYRE SINCLAIR'S SANATORIUM, SHOWING PIVOT-HUNG REMOVABLE WINDOWS AND EXTENSIVE VIEW OF MOUNTAIN RANGE AND PLAINS BEYOND.

plains stretching away as far as Sydney. This is well seen in the illustration. High ground at the back of the sanatorium and numerous native trees afford adequate shelter.

The part of the design now completed, apart from the nurses' block and kitchen, consists of five châlets and one long wing, containing seven single bedrooms, opening in front on to a wide veranda and at the back into a corridor. All the structures are of wood, roofed with galvanized iron, which would make the rooms hot in summer, were it not that the roof-plate is much higher than the ceiling-level, and that between the plate and the ceiling-level on the outer walls a space is left, through which a large volume of air constantly circu-

lates. This arrangement has proved to be quite successful in keeping the rooms cool in hot weather. Another feature in this sanatorium is that the roof of the veranda, which is very deep, is not supported by posts in the usual fashion, but is a continuous pent-house. In this way a spaciousness of effect is secured, which would not be the case if posts had been used. At one end of this veranda is, as seen in the picture, an open-air dining-room. Each bedroom is supplied with hot and cold water, and is lined with a fire-proof material, which is also a non-conductor of sound. The walls are enamel-painted. The



DR. MCINTYRE SINCLAIR'S PRIVATE SANATORIUM, NEW SOUTH WALES, SHOWING CONSTRUCTION OF VERANDA AND OPEN-AIR DINING-ROOM ; ALSO "AUSTRAL" WINDOW ON LEFT HAND.

windows of the bedrooms are pivot-hung vertically, and can be removed altogether if required. In other parts of the building "Austral" windows are placed, and have been found to be very satisfactory. One of these can be seen in the picture.

The other private sanatorium is also on the Blue Mountains, and is under the charge of a nurse. There is no resident medical superintendent, but a doctor visits the institution. There are about eight beds.

New Zealand has two public sanatoria supported by the Dominion Government : one is at Cambridge, in the North Island, with sixty beds; and the other at Canterbury, in the South Island, with a like

number. The former has been described in a previous number of this Journal by Dr. Malcolm Mason, the Chief Health Officer, and it is only necessary to say here that the area of the estate is 1,000 acres, and the elevation 1,100 feet above the sea-level; that there is a central administrative block for the staff; and that the patients are accommodated in pretty wooden shelters, some with single beds, some containing two, and some four, beds. Dr. Mason's idea is not to establish more of such highly specialized institutions as the above, but to arrange that each hospital district shall make provision for its own



"TE WAIKATO," CAMBRIDGE, OPEN-AIR SHELTER.

cases. This has been done in some instances by the erection of shelters close to the main hospital. There are two private sanatoria under the care of medical practitioners: one at Christchurch, with eighteen beds; and the other at Dunedin, with fourteen. The patients live in wooden shelters and tents in the former, and in a wooden building of single rooms in the latter. With the accommodation that is now provided for advanced incurable cases in about six general hospitals, Dr. Mason thinks that it may be safely said that "New Zealand will have shortly made better provision for consumptives than almost any other country."

Homes or Hospitals for Advanced and Incurable Cases.

In *Tasmania* and *Western Australia* there are none. In *Queensland* special wards are attached to the Diamentina Home for Incurables. In *South Australia* there are fifty beds in the Home attached to the *Adelaide Hospital*. In *Victoria* there are 120 beds in the *Austin Hospital* for Incurables. A number of advanced and incurable cases are also to be found in the General Hospitals, the Benevolent Asylums, and the Home for the Aged and Infirm—probably about eighty in all. The Victorian Government has recently intimated its intention to give the fight against consumption a foremost place in the legislation of the coming Session. In this they will be guided by a report prepared by Dr. Norris, late Chairman of the Board of Health, in the course of which he says that seventy more beds are required in the sanatoria for early cases, and 200 more in the homes for incurables. Half the cost of providing and maintaining these beds can by law be demanded of the Municipal Councils of the districts served by such accommodation.

In *New South Wales* the State Government has recently opened a hospital for advanced and incurable consumptives at Waterfall, on the south coast, twenty-four miles south of Sydney, and about 1,000 feet above sea-level. The grounds are 20 acres in extent, and the buildings cover an acre. There are six large wards, two small wards, and a large dining-room. The wards are heated by copper radiators; there is a never-failing water-supply; the sewage system consists of three concrete septic tanks and two rubble filter-beds. Only a part of the proposed buildings, which are to provide a refuge for cancerous and other incurable cases as well as consumptives, has been erected. They are solidly built of stone. One hundred and sixty consumptives, all of whom were transferred from the old Asylum at Liverpool, are now housed in the buildings, but forty more beds will shortly be available. Men only are received. At the present moment there is no special institution to which women suffering from consumption in an advanced stage can be sent; their only refuge is the Asylum for Aged and Infirm Women at Newington, manifestly a most unsuitable place for young women—indeed, very few will consent to go there. As I write, however, it is announced that the Government has decided to spend £10,000 in buildings for the reception of women consumptives in the advanced stage of the disease. As already mentioned, in *New Zealand* advanced consumptives are provided for in annexes to about six general hospitals.

Although the regulations do not admit of the reception of consumptives into the wards of the general hospitals in Australasia, nevertheless, as in other parts of the world where the same rules

exist, there are always to be found in such wards a certain variable number. Including these, the total number of beds for consumptives of all classes in Australia and New Zealand amounts to about 1,100. Now, the population of the two countries combined was in 1901, when the last census was taken, 5,028,207, and, estimating the average length of time which each patient occupies a bed at six months, it appears that the provision for consumptives amounts to one bed for every 2,286 persons living.



KALYRA SANATORIUM, SOUTH AUSTRALIA : MEN AT PICK AND SHOVEL WORK.

Provision for Consumptives and their Families.

In none of the States of the Commonwealth or in New Zealand is there any special State organization for the support of the families of indigent consumptives whilst unable to work or under treatment in a sanatorium. The absence of such provision disposes the labouring man to decline to enter a sanatorium as long as he is able to work. The early stage of the disease is thus frequently passed, and the man's chances of a cure greatly diminished. Some assistance is given by the ordinary benevolent societies, but nothing more is done.

There are no after-care associations or consumptive colonies in Australia, but the medical superintendents of sanatoria or the Health Department advise discharged patients as to suitable occupations, and

endeavour to keep in touch with them either by personal interview or by letter. A beginning has been made in New Zealand by the establishment of a working colony for cured cases. Twelve men are employed by the Forestry Department in tree-planting. They do their own domestic work—cooking, washing, etc.—and receive eight shillings a day. If a man so employed is not a member of a Friendly Society, the Charitable Aid Board has to keep his family.

Work for Consumptives.

The importance of graduated work, both for men and women, is recognized at all the Australasian sanatoria. It has not only a therapeutic value, but it is found to make the patients more contented, and it certainly renders them much better fitted to resume their ordinary occupations after discharge. At Kalyra, in South Australia, it is "one of the chief factors in the treatment, and it is similar in kind to that done at Frimley." At Greenvale, in Victoria, and at King's Tableland and Thirlmere, in New South Wales, the patients are required to do such work as directed by the Medical Superintendents.

In New Zealand "work plays an important part in the treatment."

In conclusion, it may be stated that Koch's tuberculin is used in selected cases, but only as a subsidiary aid to the open-air method, upon which the chief reliance is placed.

Attention to the teeth of the patients has recently, by arrangement with the Dental Hospitals in Sydney and Melbourne, been made compulsory before entering a sanatorium.

In the compilation of this paper I have received much valuable help from the Public Health Officers in the States and in the Dominion, and to them my thanks are due.

ORIGINAL PAPERS.

OPEN-AIR DWELLINGS.

By JOHN V. VAN PEELT,

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IT is generally conceded that those suffering from tuberculosis of any kind are benefited in proportion to the amount of time they spend out of doors. Latterly the open-air treatment is being extended beyond the cure of tuberculosis to that of a number of other widely-differing diseases, and from the premises of the open-air hospital the open-air residence for those sound in health is being argued. The sum of these arguments points the deduction that the more "out of doors" we can make our dwellings, the better will it be for our health, and that not only the sleeping apartments, but the reception-rooms, living-rooms, even the closets, should be, to all intents and purposes, out of doors.

There are certain objections to this. One, an objection of principle, which induces us to pause when we realize that, with present-day business methods, it is necessary for male members and a certain number of the female members of the human race to spend a large portion of their time in crowded offices, and to remember that animal organisms do not resist toxins unless they become to a certain extent immune to them by habit. The out-of-door-grown Indian indoors shows little resistance to tuberculosis.

There are also reasons of custom which prevent our living entirely *al fresco*; and while it is possible to harden oneself to a very great degree, it is nevertheless not entirely possible, in our intemperate zone, to live without some protection from the elements. If a large part of our vitality were expended in rebuffing the attacks of Nature, we should have less to apply to the activities which the daily life of most of us enforces. Despite the disadvantages presented by some of these arguments, there is no doubt that, if the early morning light and distracting early morning sounds could be eliminated, the out-of-door bedroom—entirely open—would be the most hygienic, and, for those who have experienced it, the most agreeable. Thus the out-of-door bedroom should be shaded, unless the bed itself can be somewhat shaded. For winter use a dressing-room with wardrobes or clothes-closets should adjoin the bedroom or sleeping-porch.

It is most important that all closets be ventilated and well lighted. This point is too often overlooked by the house-builder, who forgets that sunlight and fresh air are purifiers for his clothing as well as himself.

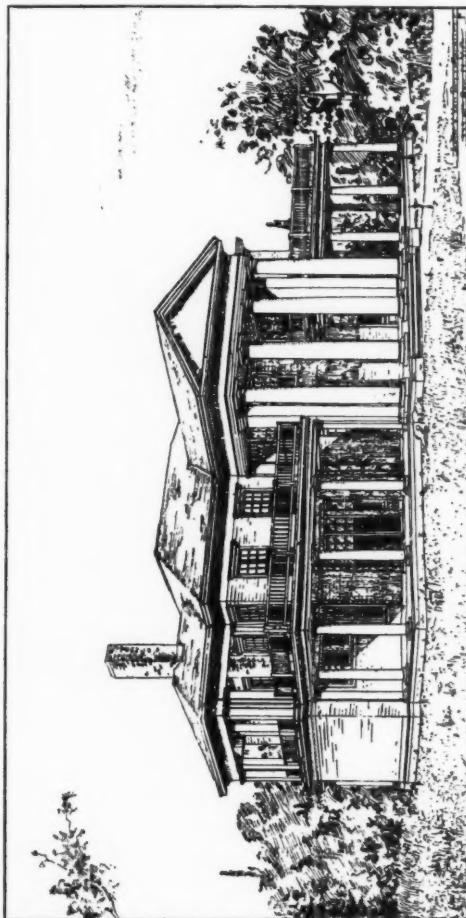


FIG. I.—OPEN-AIR PRIVATE DWELLING.

The amount of open-airness possible in living-rooms is measured by the willingness or ability of the owner to dress properly for such a life. Moreover, the ordinary business man could not survive a warm office followed by heated theatres, receptions or bridge parties five days out of the week, and an ice-box with a wintry wind on the two other



FIG. 2.—FIRST-FLOOR PLAN OF OPEN-AIR PRIVATE DWELLING.

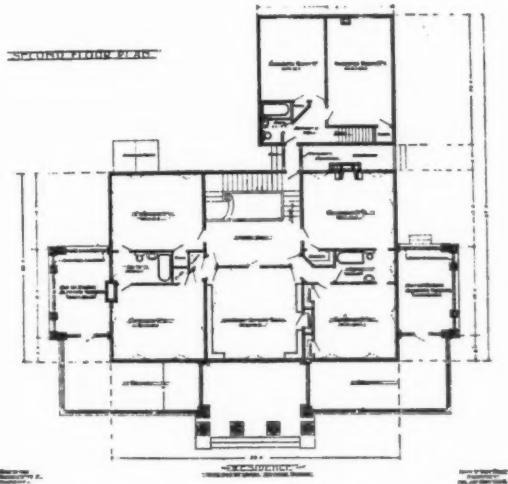


FIG. 3.—SECOND-FLOOR PLAN OF OPEN-AIR PRIVATE DWELLING.

days. The writer or artist—and one of our most famous painters points the moral here—can easily and healthfully pass most of his time in an out-of-door studio; but until our social life changes as a nation, the general planning of the living portions of the out-of-door house must be governed entirely by special cases. Admitting this, we may agree that, for the average household, good results are obtained by porches so constructed, with square piers, that glass frames can easily be placed in the openings, and that, even when in place, they can readily be opened. In detailing the windows for the Solarium at Otisville (the New York City Sanatorium), I used large double-hung windows, with transoms above, surrounding the room. The double-hung windows slide up past the transoms into boxed



FIG. 4.—ECONOMICAL SANITARY HOUSE FOR ONE FAMILY.

heads in the roof, presenting either an opening of almost the whole space, or, when inclemency of the weather makes it advisable, one in the upper part of the room, protected by the eaves of the roof. For the ordinary case I prefer the French window opening in, where the two sashes fit into each other and are fastened by a Cremorne bolt. I have used this repeatedly, and have had no difficulty in making these windows tight. The type is shown in the accompanying illustrations (Figs. 1, 2, and 3) of the open-air private dwelling, designed for one of my clients, and illustrated here in reprint by the kindness of Dr. S. Adolphus Knopf, who used it in his latest treatise.¹

If large open-air windows are adopted, the architect's first care must be for his floors. The hard wood floor, wax finish, is the most agreeable to the greatest number of persons; but open windows on

¹ "Tuberculosis: A Preventable and Curative Disease." By S. Adolphus Knopf, M.D. New York: Moffat, Yard and Co., 1909. Price \$2.

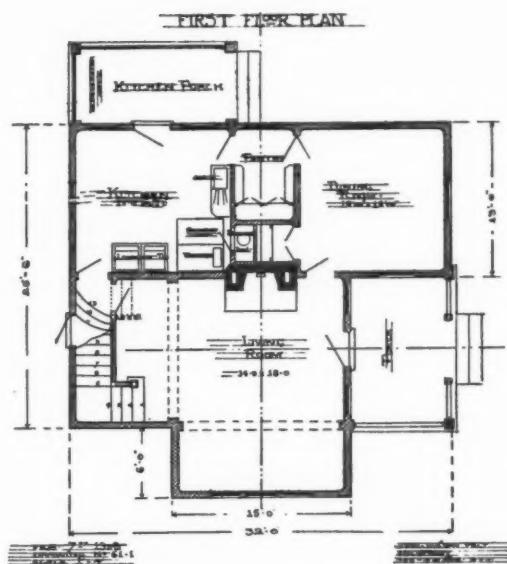


FIG. 5.—FIRST-FLOOR PLAN OF ECONOMICAL SANITARY HOUSE.

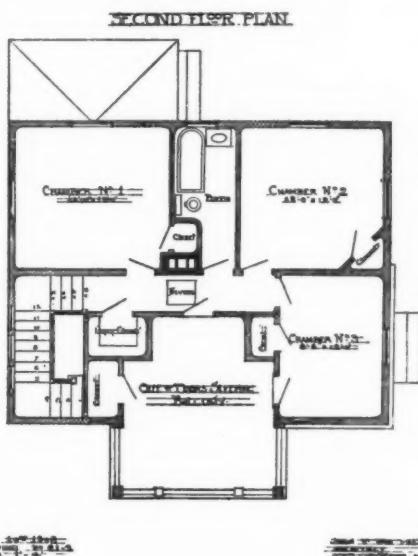


FIG. 6.—SECOND-FLOOR PLAN OF ECONOMICAL SANITARY HOUSE.

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damp or rainy days ruin it. Up to the present time, interlocking rubber tiling has remained ugly ; it presents a number of fine cracks, and it is very expensive. Tile is cold and hard to the foot, and is also expensive. The tar-product floors are likely to crack, and the asphalt tar-floors, although serviceable for school playrooms, are not beautiful. Cement floors are hard, cold, and the cement is certain to powder. Linoleum of the best quality is very durable, and can be easily cleaned on top ; but it necessarily presents bad cracks between the widths, and is not cleanable at all underneath, although there is ordinarily a space below which may act with a certain amount of suction, and puff dust in and out. If the linoleum is cemented down with a tar composition, or laid in slater's cement or a similar compound, this is eliminated ; but the result is very expensive and the linoleum difficult to change. I have used some of the magnesite compositions with great success ; but these must be carefully specified, and should be laid on expanded wire lath, else they are likely to wear away or crack. At Otisville I covered a large surface with it on a porch over 100 feet in length, and up to the present time it has shown excellent results.

The walls and ceilings of an out-of-door room should not be more abundant in projections as receptacles for dust than the walls of a tightly closed room. More dust usually comes in, and it is more blown about, as there is more wind, although the air that blows it about is freer from contaminated particles, and the dust itself is of a different nature.

While custom makes mouldings a chief element in architectural decoration, variations of colour and texture can replace decoration in projection with happy effect. The insertion of coloured tiles at different points, and the use of different colour designs flat upon the wall, growing in favour, with a stimulating demand from the public, there is no reason why this form of artistic expression should not reach as high a degree of development as the tile and colour work of earlier periods.

All walls should be non-absorbent, and this can be secured by plaster painted with lead and oil paint, or, if a simpler finish is tolerated, with what is known as Bay State brick and cement coating.

The next problems which present themselves to the architect are those of plumbing and heating. If the temperature of a room may reach zero, it is evident that no water can be retained in pipes within it. Despite a usual practice, I have come to believe steam-heating much more practical for such buildings than hot water. Bathrooms must always have a certain amount of heat in them if they are in a cold climate. It is hardly worth while to consider warmed-air heating in the real out-of-door house, as wind-pressure on the

registers on one side would render them inoperative. Only a plenum system could counteract this, and the plenum system itself is supposed to work behind closed sashes.

We have been discussing open-air dwellings of the country and suburbs where houses are separated, if not isolated. City dwellings are in a class distinct from these, and must be subdivided into two main classes—private houses and “tenements.”

Urban life entails a close herding of humanity, and the difficulties of combining an out-of-door life and privacy is great. Screens, lattices, etc., are the ready expedient, but should be built so as not to exclude sunlight and a free circulation of air. Since city houses necessarily are built on or near the street building line, a “square” or “block” really encloses an open court. In certain cities these courts off backyards have outlets to two or more of the surrounding streets by alleys or back streets; and this is very advantageous, because an enclosed space, unless very large, forms a pit that retains the lower strata of air. In the streets the wind agitates and mixes these strata, and a channel of communication to the court at the ground level induces a similar change in the court, even if the lower levels of this air are not cool enough by contrast with the air of the street to “run out at the bottom.” In planning new cities and in remodelling old ones, provision should be made for openings or alleys from the backyards to all four of the streets surrounding the blocks. It is also important that the opening towards the south be as large as possible, to reduce the line of buildings casting a perpetual north shadow. If the streets run north-east and north-west, the perpetually shaded portions will be reduced to the minimum, and the sun given greater chance to dry and disinfect the interior area.

Sleeping apartments in the city may be quieter if placed on the backyard; but the Continental idea of placing the living-rooms on the “garden” has always appealed to me, and with modern facilities of drying-machines for clothes, and dumb-waiters to take them to the roof on sunny days, there is no reason why a little healthful country greenness should not be brought into city life.

The roofs offer the best “out-door” space in the city, as they provide the best air and the maximum of sunshine. Pergolas and attractive railings may surround them, and garden-boxes be placed near the bearing walls without increasing the expense of roof beams.

Numberless inexpensive waterproofing compounds are now on the market, based on tar, asphaltum, magnesite, and cement. It is well to imbed in either of the two last metal lath or expanded metal, especially if it is to be laid over a tinned or tarred surface, as moisture that penetrates through the cement accumulates at the bottom in

sufficient quantities to freeze and break or crack it. This is true of the concrete filling in which flat tile or marble chips might be laid.

In order to obtain a sufficient number of out-door rooms in a city

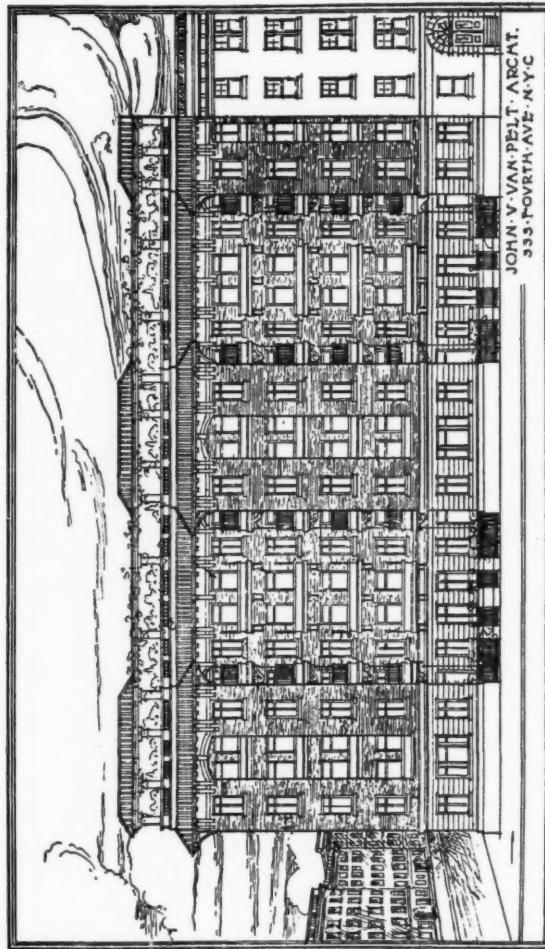


FIG. 7.—ELEVATION OF OPEN-AIR MODEL TENEMENT HOUSE.

house and not darken the other rooms, it is possible to make several open stories, preferably around three sides of a "patio," on the roof of the last enclosed story. The open side of the "patio" should be to the south.

What has been said here applies to tenements and flat or apartment houses. Dr. Knopf has kindly permitted me to show two designs of a tenement (Figs. 7 and 8) taken from the work to which reference has already been made. The study of such buildings has been so ably treated by him that repetition of the major principles would be plagiarism.

I want to make special mention of one point, however, that is peculiarly important in this class—that of the transmission of disease by rats, mice, and other vermin. Although the construction of tenements may present solid dividing walls between the flats, open

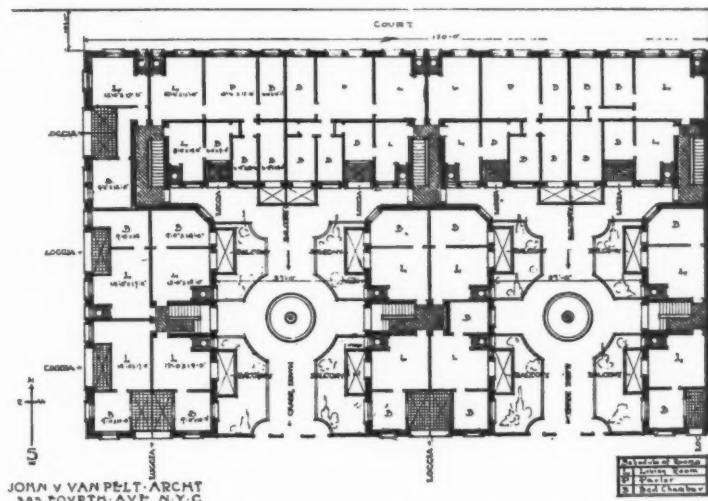


FIG. 8.—PLAN FOR OPEN-AIR TENEMENT HOUSE.

balconies built to increase the open-air space are excellent passageways for nimble pests ; and if the building is not so constructed that their residence in any portion would be impossible (a difficult task in cheap construction, where air-spaces in the walls are advisable to keep the buildings warm and dry), the exterior balconies must be protected from intercommunication, as well as from sight and the incursions of the elements. Still, sun and air must have free ingress, and I sometimes think it is better to be a patient than an architect.

Before leaving this interesting subject I wish to say a word about mosquitoes and flies. The greatest objection which I have found to the out-of-door urban or suburban dwelling in America is that in almost all parts—of the East, at least—it has become necessary to live

behind screens in order to live at all. Hygienically the screen is not an advantage ; but the architect must remember that, where mosquitoes, flies, or similar pests, abound, he must so construct his house that its inmates can exist in comfort and safety. Possibly in some future age our Boards of Health will attain such wonderful efficiency that the mosquito and house-fly will become extinct species.

SOME IRISH WRITERS ON TUBERCULOSIS IN THE EIGHTEENTH CENTURY.

By T. PERCY C. KIRKPATRICK,

B.A., M.D., F.R.C.P.I.,

Physician, Steevens' Hospital, Dublin.

THE first Irish medical writer who dealt with consumption was Edward Barry of Cork.¹ In 1726 he published in Dublin a book entitled "A Treatise on Consumption of the Lungs," which was re-issued in London in the following year. In 1759 he published in London² a work on the three different digestions and discharges of the human body, and the diseases of their principal organs, which is practically a re-issue in an amplified form of his work on Consumption.

Barry's work, as he tells us, is founded on the teaching of Boerhaave, and though it contains many useful clinical observations, its value is greatly lessened owing to the very erroneous views that he held both in physiology and pathology. Much of what he says, however, is admirable. "Several Authors are of an Opinion that a Consumption of the Lungs is contagious, but have not rightly considered in what particular Cases only, and after what manner, it may prove so; for it cannot be communicated, but from one in the last Stage of a Phthisis; neither then is the Contagion so sudden as in other Diseases, but requires a longer Time to exert its Malignity, and generally a peculiar Predisposition in the Person who receives it: But when both these circumstances concur with sufficient Force, it is most certain from many instances that the Infection may be communicated." He disagrees with the view put forward by Martin as to the causation of consumption : "It has been observed that Ulcers in the Lungs, and in

¹ "A Treatise on Consumption of the Lungs; with a Previous Account of Nutrition, and of the Structure and Use of the Lungs." By Edward Barry. 8vo., 276 pp. Dublin, 1726, and London, 1727.

² "A Treatise on the Three Different Digestions and Discharges of the Human Body, and the Diseases of their Principal Organs." By Edward Barry, M.D., F.R.S. 8vo., 434 pp. London, 1759.

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other Parts, when narrowly viewed with Microscopes, are covered with several Insects from whence it has been concluded that they owed their Origin to them, and by being inspired with the Air, fixed their Situation on the Lungs, eroded, and ulcerated them." Barry looks on the "Insects" as the result and not the cause of the ulceration, and concerning them makes the following remark: "This infinite Number of Animalcules which swarm in the Air and on the Surface of the Earth seem to me to be of a much greater Use and Importance than is generally imagined; as all stagnating animal and vegetable Humours are quickly taken up by them, and receive a new Life and regular Circulation; and perhaps we owe our safety in some measure to this scarcely visible Part of the Creation; without which the Atmosphere would in a short time become highly corrupted, and unfit to continue the Life of other Animals." While we find him giving admirable directions with regard to diet, fresh air, and exercise, we also find him recommending "Preparations of the Millepedes" as medicine. He advocates very strongly operation for empyema and abscess of the lung, and records several successful cases.

In 1739 John K'Eogh¹ published "A Short Treatise on the Diagnostic and Prognostic Parts of Medicine," in which he speaks of phthisis as follows: "The confirmed signs are, a gentle fever, a continual cough, a consumption of the whole body, difficulty of breathing, pulses sometimes slow, and sometimes quick, sweats in great abundance in the time of sleep, the hair falls off, the nails become crooked . . . the spittle green, sometimes of other colours, and being put in water sinks to the bottom; at length small bits and portions of the putrified lungs are spit out." As regards prognosis, he says: "If this disorder is inveterate, it is for the most part incurable, but if recent the cure is easier." In his "Zoologia Medicinalis Hibernica," published at the same time, he says: "A water distilled from shell snails in canary wine, in the month of May, is a great restorative in consumptions." "A gelly made of garden snails is exceeding good to cure consumptions in children."

In 1764 Thomas Marryat,² a physician practising in Dublin, published in that city his "New Practice of Physick." He defines pulmonary phthisis as "when the whole habit of the body is consumed by an ulcer in the lungs." "The cause is that which occasions the blood to stagnate in the lungs and become purulent matter." "The prognostics: An hereditary phthisis is the worst. A phthisis in

¹ "Zoologia Medicinalis Hibernica; to which is added a Short Treatise on the Diagnostic and Prognostic Parts of Medicine." By John K'Eogh, B.A. 8vo., 167 pp. Dublin, 1739.

² "The New Practice of Physick, founded on Irrefragable Principles, and confirmed by Long and Painful Experience." By Thomas Marryat, M.D. 4to., 364 pp. Dublin, 1764.

which the vomica breaks suddenly, the expuition white and cocted, the appetite and digestion good, is curable." "The cure : A milk diet or that of meat broths, as strong as the stomach will bear, especially of pork (by the use of which I've seen miracles perform'd), and riding on horseback, are things absolutely necessary. A warm, dry, clear air . . . snails or earth-worms boil'd in milk . . . conserve of red roses to the quantity of two or three ounces in the day."

In his "Therapeutics"¹ he describes his own case : "I was upwards of thirty years of age, when, from a neglected cold in the month of November, I was seized with a hectic, which in the rapidity of its progress equalled any thing that ever I saw." As a result of this he was at death's door, and having been given up by "two judicious and learned physicians," he started treating himself by his own method. "I pursued the same method recommended below (which I have since recommended to thousands in the same disorder, with the same success), and in six weeks' time was perfectly recovered, nor have since felt the slightest complaint, but at this present time of writing am as healthy and hearty a grey-headed old fellow as any one in his majesty's dominions."

David MacBride enjoyed great reputation as a physician in Dublin during the latter part of the eighteenth century, though he devoted much of his attention to the practice of obstetrics. In 1772 he published in London "A Methodical Introduction to the Theory and Practice of Physic,"² and in 1777 a second edition³ of this work was issued in Dublin in two volumes. In this he says : "The phthisis is so frequent in most parts of the British Islands that it may be held as an endemic ; it is also very often hereditary, the seeds of the disease or morbific disposition of the body being transmitted from parents to their offspring." Those with this "morbific disposition," "if very particular attention is not had to the preservation of their health, will fall into a pulmonary consumption, sometime between their sixteenth and thirtieth year ; but if they can, by temperance and care, and by living in a pure atmosphere, distant from the smoke of large towns, get beyond their thirty-sixth year, they may probably pass the remainder of life with tolerable security as to a phthisis." "Phthisis is to be considered either as primary, or secondary coming on in consequence of some preceding disease." Of primary phthisis there are three varieties : (1) Phthisis sicca ; (2) phthisis mucosa, seu catarrhalis ; (3) phthisis hæmoptoica. "When secondary it will take its name and character from the disease on which it will be found to

¹ "Therapeutics ; or the Art of Healing." By Thomas Marryat, M.D. Seventh edition. 4to., 420 pp. Birmingham, 1785.

² "A Methodical Introduction to the Theory and Practice of Physic." By David MacBride, M.D. 4to. London, 1772.

³ *Ibid.* Second edition, enlarged and corrected. Two vols., 8vo. Dublin, 1777.

supervene." The three varieties of primary phthisis are clinical rather than pathological varieties. Cases "if taken in time may sometimes be cured, and even when the disease has made most considerable advances, and has absolutely formed itself, life may be prolonged for several years by pursuing the plan above mentioned."

Dr. J. Fisher¹ published in Dublin in 1785 a small book on Physic, in which he devotes some pages to consumption. "A Pulmonary consumption generally begins with a dry cough, which continues for some weeks or months, and sometimes for years, which cough is increased by catching any cold. The Patient has often a disposition to vomit after eating, excited by the cough. He has also, generally, pain and uneasiness in the breast, especially after motion. The saliva or spittle tastes saltish or sweetish, and is often mixed with blood. He has also generally a quick small pulse. These are the signs of a beginning consumption." As regards treatment, chief weight is laid on regimen. "The patient should breath a pure country air, and should ride out on horseback every forenoon, unless he have been liable to a spitting of blood, and then he had better use a carriage. . . . By such means as these the progress of the disease may often be relieved and retarded, and the patient's life prolonged, much more than by any medicines which I know to have been yet discovered." He then sets out the various remedies that are recommended, and ends by saying: "Yet I believe the best and safest method hitherto known is to use the regimen above mentioned, with small bleedings, issues, setons or blisters, together with an ounce of the lac ammoniacum, or from half an ounce to an ounce of the squill julep two or three times a day, when the cough is troublesome, and an anodyne draught in the evening."

Michael Ryan² of Kilkenny published in 1787 "An Enquiry into the Nature, Causes and Cure of the Consumption of the Lungs." In this work he accepts the idea of the intimate causal connection between tubercles and consumption, but what these tubercles are he is not so sure. He is inclined to look on them "as affections of the conglobate lymphatic glands," and intimately associated with scrofula. Inflammation and consequent suppuration of these tubercles, with the attendant hectic, constitutes a phthisis. The influence of such diseases as measles, influenza, and syphilis, is insisted on, though whether they act by the production of tubercles or by causing inflammation is not quite clear. With regard to treatment he has little, if anything, that is new to teach. He enters a protest against the extravagant stories of cures reputed as due to the use of mineral waters. He says "that

¹ "On Diseases." By J. Fisher. 8vo., 188 pp. Dublin, 1785.

² "An Enquiry into the Nature Causes, and Cure of the Consumption of the Lungs." By Michael Ryan, M.D. 8vo., 227 pp. Dublin, 1787.

in England and Ireland, too, there are innumerable living testimonies that fortify me against any opposition, and that the proverbial phrase of *Morbus Anglicus*, applied to the consumption of the lungs, rests on as firm a basis now, as at any other time, notwithstanding the assistance we have from our celebrated waters."

The last book we shall deal with was published in Dublin in the year 1798, by Michael O'Ryan,¹ M.D., late Professor of Medicine in the College of Lyons in France. He begins with urging the necessity of investigation of the seat and causes of the disease by post-mortem examination of the bodies of patients dead of consumption. O'Ryan is satisfied that haemoptysis is a symptom, but not a cause, of consumption. He believes that consumption is due to the presence of tubercles in the lungs, excited into activity by inflammation. These tubercles are inherited, and the sign of their presence is a badly-shaped chest. What the physician has to do is to prevent inflammation, and the tubercles will remain latent. "A preventative Cure is, therefore, the only one on which we ought to place any dependence." When hectic fever is once established, the patient should be protected from fresh air. "The cough and the pains which attend it, the difficulty of breathing, etc., become more violent and distressing by breathing the purest or most copiously *oxygenated* air, than by that which is contained in the room which the patient inhabits, or even in stables or cow-houses." Perhaps it is to teaching such as this that some of our present-day difficulties in inculcating the use of fresh air are due.

GENIUS AND TUBERCULOSIS.

By GEORGE H. R. DABBS,
M.D.

It is customary when speaking of the national losses resulting from the ravages of tuberculosis to consider the question merely or mainly from the monetary standpoint. This is natural. The importance of material loss appeals to all men. I want to show that a case may be made out into which "business" does not enter. The currency must enter into all sublunary life; we must live, and to live hygienically a reasonable command of money is essential. To stamp out disease, money must be co-partner to endeavour. Enterprise of the pro-

¹ "Advice in the Consumption of the Lungs: wherein the Nature and Causes of that Disease are investigated by Anatomical Inquiries, and Plain and Suitable Methods for its Prevention and Cure are circumstantially laid down. By Michael O'Ryan, M.D. 8vo., 131 pp. Dublin, 1798.

phylactic order *is* money, say what we will—money directed as to expenditure by expert experience, but money *au fond*. And yet it is true that no personal living reputation can endure as posthumous fame merely by the fact of a man having died rich. The *bruit* of wealth does not extend to the arterial issues of fame, or if it does it is only for a time, and not for that eternal period which “to be a classic” means.

It is necessary that we should consider the intellectual losses of the world resulting from tuberculosis having “interrupted” the possible giants, and made of their memories a kind of national regret. Shakespeare, in his will, said : “I leave you my spirit, the better part of me.” It is of the spiritual losses of mankind that I desire to speak. We all “weep for Adonais,” as Shelley wept for him, but Adonais is, unfortunately, in the holocaust of literature, “linked with loss,” multiple, and not one only.

It is not a popular plea to put spiritual, intellectual, artistic, poetical loss in the shadowy scales of the intellectual dreamer and prefer petition that in a world of barter a heaven of possibility should have some consideration. The flowers on Parnassus are seed-sown with the blood of intellectual martyrs. Music, art, poetry, have all contributed to the spiritual and necessary side of difficult human life, and each art has yielded its premature victims to the White Fiend. If there were not a dual side to life—if it were possible to men who think to regard all existence as only a compromise between material loss and gain—it would be a useless thing to cry aloud to the wilderness that a ghost had passed out from the green pastures of life to the implacable dark, whose years were only few and whose promise was so great !

Fortunately, however, there is a leaven of mankind to whom the Divine epiphany of wonder and admiration will ever attach as a potential part of tolerable life. And these are the pall-bearers where early genius is borne to the tomb !

It would be easy to “name” our losses from tuberculosis—the world’s losses—but the names are fairly well known. They can be extracted by sorrowing painstaking from any dictionary of biography. But what is often so depressing to think of in relation to their shadow-haunted lives is this, that we cannot but feel that they seldom approached what we now know to be the signposts that direct towards the haven of recovery. They were foredoomed very often by ignorant carelessness or the desperation of despair. And when descriptive verse or prose touches in fiction their pitiful lot, it is not to ring the tocsin of hope, but to acknowledge defeat with almost Calvinistic iteration. The emphasis is always on the drear and hopeless inevitable, but such formula of the negation of “cure” should

no longer deface and degrade literary expression and scholarly paraphrase. I plead strenuously for a change in our method of "carving fiction from reality" (George Gissing's phrase as to Dickens—George Gissing whom we need not have lost!). A hopeful novelist is wanted who shall touch this subject with a pencil of light. I desire to see a book written which shall conserve to the world the genius and spirituality of genius, by telling the men whose minds are a national asset that they need not "fade away with the morning," if only they will condescend to consider what fresh air, sunlight, and hygiene mean. I do not wish the artist to employ, for example, models afflicted with tuberculosis, either for his sake or the model's sake—I want to see genius respect its divinity by remaining "human-divine" amongst us, and helping to purify our grosser life—our strenuous wealth-rush—in the market-place. The singer should find sanctuary of welcome in all our hearts—in all our homes. But not because we feel we must soon regret a passing presence to be ere long a vanished shade, but for a greater, higher reason in the fact that genius shall grasp the wonder of life, and shall continue to deserve, enrich, and even "endure" it. Remorse does no good to a weary world; there is no "panacea of peace" in vain regrets. This is my plea; others, I trust, will enforce the argument. Genius must not be wrecked on the pitiless rock of tuberculosis.

CRITICAL REVIEWS.

UNDER the above heading it is proposed to publish in this and subsequent issues critical summaries of the more important of recent publications relating to the pathological, clinical, and sociological aspects of tuberculosis. This, it is believed, will be of practical service to all desirous of keeping abreast of the rapidly extending literature of the subject.

TUBERCULOSIS OF THE NOSE, THROAT, AND EAR.

By GEORGE WILKINSON,

B.A., M.B., B.C., F.R.C.S.,

Hon. Surgeon, Ear and Throat Department, Sheffield Royal Hospital; Lecturer on Diseases of the Throat in the University of Sheffield.

TUBERCULOSIS is a fairly common cause of derangement in nose, ear, and throat. Both as regards pathology and therapeutics much progress is being made. Among the more important subjects recently studied, special attention may be directed to the following :

Galvano-Puncture in Laryngeal Tuberculosis.

Modern views on the pathology of tuberculosis of the larynx have modified to some extent the methods of treatment in favour with laryngologists for this condition. It is now recognized that tuberculosis of the larynx is in practically all cases secondary to tuberculous deposits in the lungs. The excellent results obtained by sanatorium treatment in early cases, and even in those somewhat advanced, are generally recognized. In laryngeal cases, the "silence" treatment is of great value as an addition to the usual routine of sanatorium treatment. The importance of giving physiological rest to the larynx was first insisted on by Moritz Schmidt, whose views have found a strong supporter in this country in St. Clair Thomson.¹ In consequence, perhaps, of the recognition of the efficacy of these general hygienic measures, there seems to be a tendency amongst laryngologists to limit the employment of active surgical treatment of the tuberculous larynx to those cases in which there is great dysphagia from ulceration of the epiglottis. The employment of deep galvano-caustic

¹ Thomson, St. Clair : *Journal of Laryngology*, November, 1901.

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puncture for cases of submucous tuberculous infiltration of the larynx is advocated by St. Clair Thomson,¹ Dundas Grant,² and others, in this country, and by Escat³ (of Toulouse) in France. This method of treatment, though long in occasional use, was first brought prominently before the profession by Grünwald in 1903.⁴ The rationale of the treatment is to produce cicatrization of the focus in the submucous tissues, without causing a large open wound of the mucous membrane, as is inevitable by the use of the laryngeal curette. Cases showing very encouraging results have been recently exhibited.⁵

Nasal Obstruction and Pulmonary Tuberculosis.

It might well be surmised on *a priori* grounds that nasal obstruction, by inducing mouth-breathing and under-development of the thorax, would be an important predisposing cause of pulmonary tuberculosis. Such seems to be the assumption of many writers on the subject. W. G. Rivers⁶ has investigated the evidence of statistics, and carefully analyzed recent literature bearing on the subject. He concludes that there is evidence to show that nasal obstruction from all causes is more common in the phthisical than in the rest of the community, and that there can be little doubt that the nasal obstruction is the antecedent condition and a causal factor. He makes the suggestion that the hereditary predisposing factor in the incidence of consumption may be largely an inherited faulty development of the nose and nasopharynx, causing nasal obstruction. He also expresses the opinion that the catarrhal laryngitis so frequently present in early phthisis is the result of nasal obstruction and catarrh, rather than of irritation of the larynx by coughing, which is the usually assigned cause for this association. He quotes Besançon's observations on the frequent occurrence of the same deformities of the chest in consumptives as in subjects of nasal obstruction. The presence of these deformities indicates that nasal obstruction, usually from adenoids, has been present in early life.

Pulmonary Collapse and Induration due to Nasal Obstruction.

This condition was first described by Krönig,⁷ and has been more recently investigated by Blümel.⁸ It consists of a fibrous induration

¹ Thomson, St. Clair : *Journal of Laryngology*, June, 1908.

² Grant, D. : *Journal of Laryngology*, April, 1909.

³ Escat : *Journal of Laryngology*, September, 1906.

⁴ Grünwald : *Münchener Medizinische Wochenschrift*, June 23, 1903, quoted in *Journal of Laryngology*, May, 1904.

⁵ Meeting of Laryngological Section, Royal Society of Medicine, November 5, 1909.

⁶ Rivers, W. G. : *Lancet*, December 27, 1907.

⁷ Krönig : *Deutsch Klinik*, Band XI., S. 634.

⁸ Blümel : *Münchener Medizinische Wochenschrift*, July 28, 1908.

and shrinkage of the apices of the lungs, with flattening of the chest wall over the apices, first manifest on the right side, in patients who are the subject of nasal obstruction. Blümel regards it as secondary to mouth-breathing and dust-inhalation, with resulting catarrhal conditions of the air-passages. It is a non-tuberculous affection, though doubtless a condition predisposing to tuberculous infection of the lungs. The diagnosis between this condition and early phthisis depends on absence of tubercle bacilli from the expectoration, and want of reaction to tuberculin tests.

The Diagnostic Use of Tuberculin.

Lafite-Duport and Moulinier¹ (Bordeaux) have added one more to the number of tuberculin diagnostic methods at present in use. The serum used seems to be identical with Calmette's—*i.e.*, a 1 per cent. solution, in sterile water, of dried tuberculin, previously purified by precipitation with alcohol. The novelty of the method consists in applying the serum on small cotton swabs to the mucous membrane of the septum of the nose, to which it is kept applied for ten minutes. Reaction follows in eighteen to forty-eight hours, and is manifested by congestion of the mucosa, followed by an exudate at the site of application. A crust forms later, which separates on the fourth to sixth day. If the reliability of the test be established, the selection of the nasal mucous membrane as the site of application, in place of the conjunctiva, has certain obvious advantages. A good many cases of painful and even serious inflammations of the conjunctiva and cornea have been recorded as the result of excessive reaction to Calmette's ophthalmic instillation test. Excessive reaction will probably be attended with less danger and discomfort on the less sensitive nasal mucous membrane. Another advantage is that the rhino-reaction can be applied without the patient understanding its significance or being conscious of the result obtained. We have now six methods of applying the tuberculin test to choose from : the hypodermic injection method, von Pirquet's scarification method, Moro's² ointment inunction, Woodcock's³ blistering method, Calmette's ophthalmoreaction, and the most recent rhino-reaction. An extended trial is required to determine the relative reliability and convenience of the various methods.

¹ Lafite-Duport and Moulinier: *Annales des Maladies de l'Oreille et du Larynx*, May, 1909, quoted in *Journal of Laryngology*, November, 1909.

² *Münchener Medizinische Wochenschrift*, February 4, 1908.

³ *British Medical Journal*, March 28, 1908.

GRADUATED LABOUR FOR THE CONSUMPTIVE.

BY MARCUS PATERSON,

M.B., B.S., M.R.C.S., L.R.C.P.,

Medical Superintendent of the Brompton Hospital Sanatorium, Frimley.

In the following critical review on graduated labour as a factor in the treatment of pulmonary tuberculosis, I propose to describe briefly the progress of the system at Frimley from its first inception to the present time, and then to refer to the systems of graduated labour, work, or employment as carried out at other sanatoria.

Early in 1905, while resident medical officer at the Brompton Hospital, I observed that many tuberculous patients who had followed their ordinary occupations up to the time of admission were in a very fair condition of health. The following case of a navvy might be cited as an example : He had worked for forty hours a few days previously, almost without a rest, altering a water-main, and, although he had a considerable amount of disease, was apparently none the worse for such arduous work. It occurred to me that, if some consumptive persons, under adverse circumstances, and without any medical guidance, could act thus without apparent injury, they ought, under ideal conditions, and with the work carefully graduated in accordance with their physical state, to be able to undertake useful labour. The idea was a new one, and in opposition to the generally accepted medical opinion on the subject. It had, however, been shown by Dr. Otto Walther, of Nordrach, that excellent results could be obtained by graduated walking exercise, especially when in suitable cases this exercise was pushed to the extent of walking twenty miles a day.

The system of graduated labour was commenced on the opening of the Brompton Hospital Sanatorium at Frimley, in March, 1905, and by the end of six months was in thorough working order, and the patients performing the hardest manual work.

In January, 1906, seven well-known physicians were asked to write their opinions as to the practical value of sanatorium treatment. Five of them referred to the graduated labour experiments being made at the Brompton Hospital Sanatorium. Opinions generally expressed were that if the idea was found successful, it would be of inestimable advantage to the working man, but that at the time of writing there was insufficient proof of the system's success, as it then had not been instituted for a sufficient length of time to warrant a definite conclusion from its results.¹

¹ See series of articles in *Lancet*, January 6, 1906.

In January, 1908, I read a paper before the Medical Society of London, giving in detail the scheme of graduated labour and the results obtained. Dr. A. C. Inman at the same time presented a paper to show that the good results obtained were caused by auto-inoculation.¹

Such in brief outline has been the object which I have had in view in carrying on the system of graduated labour at Frimley.

Turning now to those sanatoria in which patients have been engaged in work in addition to mere walking exercises, a distinction may be made between those in which the work has been (1) definitely used as medical treatment and has been graduated in accordance with the theory of auto-inoculation, and (2) those in which work is given to the patients to occupy their minds and prevent that mental degeneration and stagnation which was formerly the almost inevitable consequence of sanatorium treatment.

At Dr. Jane Walker's sanatorium at Maltings Farm, it has been the custom for several years to find employment for the patients with the idea of showing them that they are capable of performing some light work, preventing them from becoming lazy, and of using their work for industrial purposes.²

In 1905 it was the custom at Craigleath Sanatorium in Edinburgh to prescribe graduated walking exercise for patients and to regulate their games; and it was recognized that some might do light manual work, this being prescribed rather in the nature of a privilege to relieve the monotony of the walking, one of the rules being "work when allowed counts as exercise, but must be supplemented by at least one and a half hours' walking"; and here again it was recognized that exercise was useful in sanatorium treatment, but it had not the aim to get the patients on to hard manual work for the purposes of auto-inoculation.³

On the other hand, Dr. A. M. Foster, of Maryland Sanatorium, U.S.A., has published an article on employment of patients with tuberculosis carried on along Frimley lines of graduated labour with beneficial results.⁴

Dr. L. Gilchrist has at Ventnor Sanatorium for over a year carried on, with undoubted success, an organized scheme of graduated labour on the lines laid down in the paper already referred to.⁵

¹ Paterson, M., and Inman, A. C.: "Graduated Labour in the Treatment of Pulmonary Tuberculosis," and "The Effect of Exercise on the Opsonic Index," *Lancet*, January 25, 1908.

² Walker, J.: "Industrial Aspect of Tuberculosis," Proceedings of Congress of Royal Sanitary Institute, 1908.

³ See Time Table, Victoria Hospital, Craigleath, 1905; also article on Phthisis by R. W. Philip, in "Index of Treatment." Edited by R. Hutchison and H. S. Collier.

⁴ Foster, A. M.: St. John's Hospital Bulletin, August, 1909. Reference in the *Lancet*, October 16, 1908, p. 1154.

⁵ See Report Ventnor Sanatorium, 1908, pp. 11, 20.

A system of graduated labour was adopted by the King Edward VII. Sanatorium during 1907, and with satisfactory results.¹

In the same year, graduated labour was commenced at the National Sanatorium at Benenden. According to the annual report of 1908, "the treatment is carried out on the most modern lines, and the method, instituted by Dr. Paterson, of giving the patients work of gradually increasing severity has been given a good trial and has proved most successful."²

At the Sixth International Congress on Tuberculosis in Washington in 1908, there was a discussion following the reading of my paper on graduated rest and labour, and the feeling was very strongly in favour of the system. Every member who spoke supported the arguments. Dr. Herbert Woodcock, of Leeds, stated that their great fear was haemoptysis.³ This fear does not exist at Frimley, as there has, up to the time of writing, been no case of severe haemoptysis during working hours, and there is, in consequence, no evidence to show any causative effect of work on the incidence of haemoptysis.

To summarize : those institutions which have definitely adopted a system of graduated labour laid down on lines of auto-inoculation, and have therefore paid heed to the importance of a *mouth temperature of 99° plus a headache*, and the necessity, should this combination occur, of putting the patient upon absolute rest, have found the system practical, and one which not only helps to arrest pulmonary disease and restores the general condition of the patient, but, further than this, enables patients to leave the sanatorium with the knowledge that they are capable of hard work.

¹ See *Morning Post*, October 2, 1907.

² National Association for Maintenance of Sanatoria for Workers. Third Annual Report, p. 16.

³ Report International Congress, p. 944, vol. i., part ii., sec. ii.

PERSONAL OPINIONS.

PUBLIC opinion is the great motive power which guides and governs present-day action. And yet public opinion, as we are pleased to designate collective decision and determination, usually has its origin in the personal opinion of a few, or it may be of only one individual. In such a campaign as that which is being waged against tuberculosis public opinion counts for much. It is all-important that it should be based on experiment and built up on experience. The best views and most reliable opinions are those which are founded on fact. We propose, under the above general heading, to present the opinions of experts in regard to various phases of the tuberculosis problem, believing that such will be of practical service in indicating rational lines along which advance may be made.

THE RÔLE OF THE PRESS IN THE PREVENTION OF TUBERCULOSIS.

BY LIVINGSTON FARRAND,

M.D.,

Executive Secretary of the National Association for the Study and Prevention of Tuberculosis.¹

In the formation of public opinion, the place and power of the press is naturally of the first importance. In the anti-tuberculosis movement all countries have been slow in taking advantage of this irresistible force. In the United States we are finding that the regular press service is one of the most useful agents in the educational campaign which has yet been devised. We have for two years past been employing the travelling tuberculosis exhibition as a means of stimulating organized interest in different parts of the United States. For concentrated effort nothing could take the place of that agency, but for prolonged and constant stimulation we are finding the press service much the most productive factor. The cordial co-operation of the press is very striking and encouraging. We distribute directly to some 8,000 newspapers in all parts of the country every two weeks, and we estimate that these simple bulletins

¹ The address of the National Association for the Study and Prevention of Tuberculosis is 105, East Twenty-second Street, New York City, U.S.A.

of information are read by 3,000,000 people fortnightly. These figures indicate how promising the method is. I commend the press service to all anti-tuberculosis associations throughout the world.

THE AETIOLOGICAL DIAGNOSIS OF TUBERCULOSIS.

By W. CAMAC WILKINSON,

M.D., F.R.C.P.,

Lecturer in Medicine in the University of Sydney ; Weber-Parkes
Prizeman, 1909.

TUBERCULOSIS is a disease affecting various structures and organs, insidious in its origin, chronic in its progress, and capricious in its incidence and course. Tuberculosis, in all its varieties and stages belongs undoubtedly to the domain of the physician. Even those forms embraced in the term "surgical tuberculosis" should be returned to the physician when operative treatment is not required. When surgical methods are needed the surgeon can be called in. Nowadays, with improved methods of diagnosis and specific treatment, the physician may usually prevent surgical conditions. If, indeed, these simple and early forms of tuberculosis still remain with the surgeon, it is difficult to see what forms of disease may be entrusted to the physician. It is upon his skill in diagnosis, prognosis, and both general and specific treatment, that the physician bases his claim to this large and important section of organic diseases, and it is time that the physician peremptorily claimed to supervise cases lawfully coming within his own province.

In addition to the ordinary signs and symptoms of tuberculosis, due to local conditions (glands, joints, bones, serous membranes, brain, lungs, etc.), there are definite phenomena which owe their existence to the activity of the specific cause. These are *specific* phenomena. Apart from the toxosis which manifests itself in the general symptoms of tuberculosis, such as loss of energy, pallor, irritable weakness of muscles and vessels (and even of nervous tissues), anorexia, loss of weight, and even fever and sweating—symptoms that may be more or less simulated in various states of disease apart from tuberculosis—there are also specific phenomena ; that is to say, phenomena produced in special intensity by the tubercle bacillus of various strains, and by no other organisms.

(a) These specific changes in the blood and tissues were demonstrated by Professor Koch in his first publication upon Tuberculin, but

even now the best authorities still debate their nature and *modus operandi*. For a few of us, tuberculin used in the manner prescribed by Koch himself has been the sheet-anchor of specific or aetiological diagnosis for nearly twenty years. By too many this invaluable and indispensable test has been ignored or repudiated. None but those who have used this test consistently and continuously can realize its paramount value. Its use should be limited to those who understand its indications and limitations. Wolff-Eisner's (Calmette's) and von Pirquet's method are merely modifications of Koch's method, and should only displace Koch's method in certain conditions, especially when there is fever; and there can be little doubt that von Pirquet's method is much superior to Calmette's method. Calmette's method may give rise to very intense and prolonged conjunctivitis, with even damage to the cornea, and has no single advantage over von Pirquet's method. I am not yet in a position to state to what extent von Pirquet's method may displace Koch's original method in diagnosis. Koch's method is very simple, safe, and trustworthy.

(b) In spite of Courmont and Arloing's work and claims, the agglutination test has been proved to be worthless in diagnosis. This procedure has chiefly an historic interest.

(c) Wassermann's reaction in tuberculosis may in rare cases help in diagnosis, but success demands very great skill in technique and extensive laboratory equipment. It will no doubt be used in the laboratory to control results, especially in animals, but with simpler methods of specific diagnosis at hand it can never take the important place in clinical diagnosis which Wassermann's reaction is already assured in syphilis.

Lastly, one must mention the opsonic index, as a means of diagnosis, merely to condemn it unreservedly. It is uncertain, unwieldy, and even misleading. In my opinion, nothing has done so much to put us back in our work upon tuberculosis as the work of the opsonists. One would like to jettison the whole cargo of this worthless work upon the opsonic index in *diagnosis* of tuberculosis, in order to go ahead with research that depends upon something more than the solution of a large personal equation and laboratory contrivances with various, more or less, indeterminate and indeterminable factors. The cult of medicine has of late years had to bear encroachments and many insults; but if physicians allow themselves to be mesmerized into the view that the diagnosis of infective processes, and even the treatment thereof, have to be determined for them by a laboratory assistant, the votaries of this cult have lost their independence, and deserve to lose their influence and practice.

WORK FOR THE CONSUMPTIVE.

By J. MALCOLM MASON,

M.D.,

Consulting Medical Officer for the Dominion of New Zealand.

To house a man in a well-appointed sanatorium for months, to expend upon him special care and exceptional skill, and then to send him forth to do the best he can in the strenuous and everyday world of work, is in nine cases out of ten nothing more nor less than to waste time, talent, and money. If the expenditure is to be justified on economic grounds, our interest and guidance must not cease with the "good-bye" at the sanatorium gate.

With the wealthy consumptive the economist has no need for concern. It is the poverty-stricken tuberculous subject who presents the great problem. From a public-health point of view the dependent consumptive offers the greatest menace to the general weal, and the main stumbling-block in the path of progress. Unless such can be removed from their poor surroundings at an early period of the disease, not only will they lose all chance of re-entering the world of work, but they will be ever-increasing factors in the dissemination of the disease. This has been theoretically admitted the whole world over, and the overt evidence of this belief is seen in the establishment of many excellent institutions which have been set up for the care and treatment of these types. Under the best conditions, however, many must die, and our recompense in such cases must be sought for in the fact that their segregation means their lessened power for evil. If for no other reason, the money spent on simple, inexpensive, open-air shelters is justified, but sanatorium treatment does much more. Many are permanently cured, and in numerous instances the progress of the disease is arrested and valuable lives preserved to the State.

The establishment of sanatoria need not now be defended; their value has been proved; but if the best is to be obtained from them something more will have to be done. To ask the "cured" patient to leave and offer him no further help is in the majority of instances to stultify what has been done, except in so far as the temporary seclusion has tended to lessen the spread of consumption. What can the "cured" man do? The clerk is precluded from going back to his ledger, the baker to his batch, or the seamstress to her machine. The "cured" person must persevere for the future work under hygienic conditions if his "cure" is to be permanent. Moreover, the fact that he or she has been an inmate of a sanatorium generally

raises an effectual bar to obtaining employment in many spheres of work. With the kindest of hearts the confectioner is perforce obliged to refuse his employé who has passed through a sanatorium further work in his factory ; the milliner realizes that it has only to be known that the "model" has had consumption and her customers will seek other salons ; and so it comes to pass that the "cured" patient cannot, in most instances, even if it were wise for him to do so, take up the work he was engaged in before he was attacked by the disease. The ideal occupation which we are seeking must have certain characteristics : (1) It must, if possible, be in the open air ; (2) it must not be of too severe a nature ; (3) it must be remunerative ; (4) and it must not require capital on the part of the worker. These requisites limit our search considerably. Bee-keeping, poultry-farming, flower-growing, fruit-culture, have all been suggested ; but unless the patient has sufficient capital to enable him to engage in any of these on his own, it has been found very difficult to find work for any but a limited number of men or women.

I am glad to be permitted to record what has been attempted in New Zealand. Whether something on the same lines could be carried out in England I am not in a position to say, but *prima facie* I see no reason why it should not be possible. In New Zealand, as in most young countries which have been peopled by emigrants from the "old country," large tracts of land have been set aside for the endowment of schools, universities, hospitals, and charitable purposes. These are termed Crown lands, and are inalienable. In some instances timber rights have been sold, and the bush has been cut down ; in some cases the land is of so poor a quality, that it has been difficult to lease it ; the result is that there are great tracts of land suitable for little other than afforestation.

For some years past the Lands Department has been carrying on a scheme whereby these now barren places will once again be clothed with verdure. Various nurseries have been set up, and millions of trees have been grown and distributed all over the Dominion.

Two and a half years ago the Government agreed to my suggestion that an experimental tree-planting camp should be started for those men who had been "cured" at the Government sanatorium. We began with three four-bed tents and a cook-house. The site of the camp was necessarily at a considerable distance from any town, and as we could not afford a medical superintendent, a trained Sister was placed in charge of the camp. The men were paid the usual rate of wage for planting the trees ; and when I state that a man had to plant out a thousand trees before he earned eight shillings, it is evident that the camp was no haven of rest. The cost of the running of the camp, less the Sister's salary, was charged up to the men, and we had a first

lien on their earnings until the current expenditure was covered. The results have been so good that the Government have increased the size of the camp. Moreover, several of the men who have undergone this hardening-off process have taken up their work again in the outside world.

In tree-planting it seems to me we have found a work which satisfies all the requisites I set out. The patient works under open-air conditions ; the Government only pays for what it receives ; and the unit of State upon which care and money has been expended is not thrown out upon the waters to float hither and thither until, like other flotsam and jetsam, he gets caught in some eddy, and carried far from the main stream of work to decay and die.

INSTITUTIONS FOR THE TUBERCULOUS.

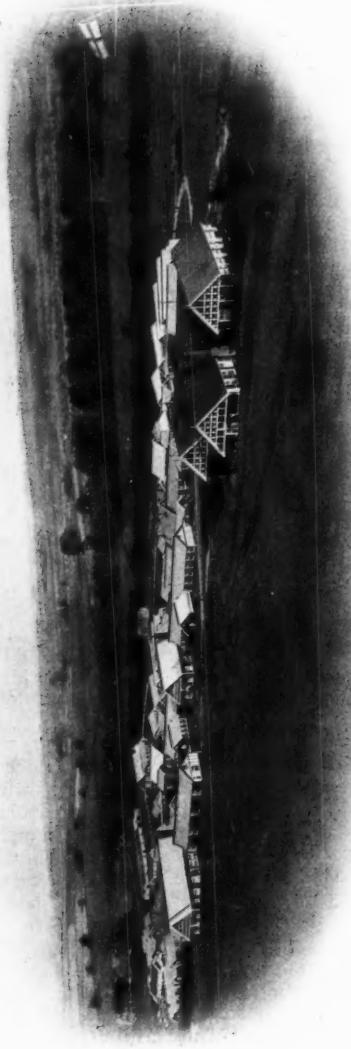
THE LORD MAYOR TRELOAR CRIPPLES' HOME AND COLLEGE.

THIS institution was founded by Sir William Treloar, and is the outcome of an appeal made by him during the period of his mayoralty of the City of London in the years 1906-07. The buildings formerly constituted the Princess Louise Military Hospital, and have been adapted for their present purpose since being taken over by Sir William Treloar and his co-trustees. They are erected on an estate some 70 acres in extent. The situation is ideal. The institution occupies the slopes of a hill some 500 feet above the sea-level, and has a southern aspect. The buildings are built of wood, bungalow fashion, on brick foundations. Heating is by hot water pumped from an extensive central power-station. Electric light manufactured on the estate is the only illuminant. The wards, twenty in number, grouped radially in two semicircular blocks, are each completely distinct, and have a perfect natural system of ventilation. A private railway-station on the estate receives patients direct on admission.

The objects of the institution are to provide for—(1) The treatment of children under the age of twelve years suffering from tuberculous disease of the bones and joints; (2) the training under medical supervision of lads between the age of fourteen and eighteen years who are crippled from any cause whatever, but who are nevertheless deemed capable of being instructed in some trade suited for their condition.

The institution was opened on September 7, 1908, and has now all its beds occupied. Some two hundred children are undergoing treatment in the home, and sixty lads are being trained in the college. On admission to the home, each child is kept isolated in a separate cubicle in one of the observation wards for a period of at least a fortnight. During this period the child is acclimatized, and trained to adapt himself to an open-air life. His case is carefully investigated, appropriate splints manufactured and applied, details of treatment and diet decided. Furthermore, the possibility of introduction of infectious disease is largely eliminated. After this probationary period the child is transferred to one of the general wards. Great stress is laid upon adequate mechanical treatment; every effort is made to prevent or correct deformity. Tuberculous abscesses are rarely opened, but instead are aspirated whenever possible, and by that means the risk of sinus formation and septic infection reduced to a minimum. Plaster of Paris is largely employed for mechanical treatment.

Members of an honorary Medical Board (nominated by the Presi-



A GENERAL VIEW OF THE LORD MAYOR TRELOAR CRIPPLES' HOME AND COLLEGE.

In the foreground are buildings occupied by the staff; farther down the hill are the wards, and in the distance to the left are the college and workshops. The country in the background has been made famous by Gilbert White, the naturalist, who lived at Selborne, some four miles distant and easily seen from the home.

dents of the Royal College of Physicians of London and the Royal College of Surgeons of England, and composed of physicians and surgeons selected from the visiting staffs of leading London hospitals) visit the home periodically.

While the institution is designed for the active conservative treatment of the tuberculous cripple, and is in no sense of the word a mere cripple asylum, yet every endeavour is made to reproduce the conditions of home life rather than the atmosphere of a formal institution. Rudeness is not tolerated, reasonable discipline is maintained, and the children are obviously happy and contented. The open-air life and abundance of wholesome food soon transforms the appearance of the child. Patients are detained as long as they can be benefited by treatment.

During the summer those children whose condition permits are instructed in the open-air forest school ; in the winter they are taught in the winter schoolroom or in the wards.

Almost every type of cripple capable of being taught a trade may be found in the college undergoing treatment and training. The trade the boy shall adopt is decided in consultation with the college master. Boys who would be especially benefited by open-air life are taught poultry-farming and horticulture ; other lads work in the leather or tailoring shops, and the work done is of a very high standard. During his period of training the general health of the cripple is improved by every possible means, and, where feasible, endeavours are made to correct or reduce existing deformity by operative or other measures. All lads likely to be benefited are drilled, and the exercises taught are performed with extraordinary zest and precision. Lads suffering from scoliosis and other conditions are instructed in special exercises designed to lessen their deformity. The supervision maintained enables these exercises to be systematically performed, with undoubted benefit to the patients. Games are encouraged, the boys are taught to be manly, and a healthy moral tone prevails.

H. J. GAUVAIN, M.A., B.C. (Cantab.), M.R.C.S., L.R.C.P.,
Medical Superintendent.

MENDIP HILLS SANATORIUM.

The Mendip Hills Sanatorium was among the first in England to carry out the treatment of pulmonary tuberculosis. It stands in its own grounds of 300 acres, at an altitude of 850 feet, and is protected by pine-woods from the north and easterly winds, while towards the south the view extends over miles of undulating country. The sanatorium is built on the châlet system. The châlets are built two by two, with a separate veranda for each, and a common corridor running at the back. The châlets are heated by hot-water radiators, and lighted by electricity. Besides the open-air treatment, we lay stress upon three special features of the sanatorium as aiding in the arrest of the disease—formaldehyde inhalations, static electric treatment, and various manual exercises. In a book just published the

resident physician gives his experience and results of ten years' sanatorium treatment of consumption. The sanatorium can easily be



A MODEL SLEEPING CHÂLET (SHOWING THE VERANDA AND VENETIAN SHUTTERS) AS USED AT THE MENDIP HILL SANATORIUM.

reached from London via Paddington or Waterloo to Wells. Patients from the north come to Wells via Bristol.

C. MUTHU, M.D.,
Resident Physician.

HEALTH STATIONS.

SAN REMO.

SAN REMO has a southern exposure, protected by an absolutely regular amphitheatre of thickly wooded hills rising to 4,259 feet. Owing to these features, the off-shore breeze which blows after sunset brings down a rarefied and practically Alpine atmosphere, so that the



average barometric reading is remarkably high for a sea-level resort, and consequently bracing instead of relaxing. The rarity and intense dryness of the air insure the greatest warmth of the sun's rays even in December or January. The temperature is kept high by three factors—the power of the sun, the presence of the sea, and the protection from north winds.

For tuberculous patients San Remo affords a combination of the advantages of a climate of medium altitude (say 2,000 feet), a seaside climate, and a subtropical climate.

Living costs from five to fifteen shillings a day. The English Community maintains a Sports Club, a Golf Club, a Book Club, two Anglican Churches and a Presbyterian Church, a Nursing Home, and a Home for Indigent Ladies.

H. CRICHTON MILLER, M.A., M.D.

NOTICES OF BOOKS.

TUBERCULOUS CRIPPLES.

DR. BIESALSKI'S new work¹ furnishes a striking testimony to the earnestness and thoroughness of German methods. Without Imperial authority and support it would be almost impossible to accomplish such a work as is described in this volume, but Imperial encouragement and assistance are never wanting where vital interests affecting the welfare of the nation are at stake. It was represented to the Imperial Government in 1904 that the condition of crippled children among the poorer classes was a deplorable one, and that, before matters could be improved, correct information on the subject must first be forthcoming. A census of all the crippled children of the poorer classes throughout the Empire was then authorized, the deformities being scheduled under an elaborate series of headings, and the home conditions of each case being made a prominent feature of the inquiry. The facts revealed by the census were startling, and proved emphatically that there was urgent need for relief measures, which was precisely the object the promoters of the inquiry had in view. The number of crippled children amounted to 75,000 out of a population of 60½ millions. Of these children 56,000 were in want of proper treatment. Yet few countries can show such a splendid array of cripple homes as Germany. There are thirty-nine such homes, giving a total of 3,371 beds, and nearly a dozen more are in course of construction. In nearly all of the homes the children are taught suitable trades. Dr. Biesalski maintains that the excessive number of cripple children who are unprovided for can only be reduced by the application of scientific methods—in other words, by the co-operation of a number of social factors, the result being that then, and then only, will each cripple receive the care suitable to his individual requirements. The marked disparity in kind and degree of deformity which a collected mass of cripples present place them in a class by themselves. It is rightly contended that the cripple is, in the first instance, a *patient*, and not an object for pity and kindly charity only. The frequent association of deformity with tuberculosis indicates the desirability of co-operative action between societies and persons interested in the tuberculous and those devoted to the care of crippled children. Only in this way can overlapping be prevented and the benefit of varied forms of treatment be secured to the crippled child. Dr. Biesalski states that 15 per cent. of the cripples counted were cases of deformity arising from tuberculous bone and joint lesions, and that there were 10,000 such children in sore need of special therapeutic treatment. He suggests that all larger cripple homes

¹ "Umfang und Art des Jugendlichen Krüppeltums und der Krüppelfürsorge in Deutschland" [""The Scope and Nature of Juvenile Deformity and the Measures for its Relief in Germany"']. By Dr. Conrad Biesalski, Director of the Berlin-Brandenburg Cripples' Home and Training School. Quarto, pp. 168; statistical tables, pp. 316. Hamburg: Leopold Voss. 1909. Price 30 marks.

should combine to establish seaside sanatoria on co-operative lines, each paying for the upkeep of ten beds and sending selected cases for periods of six months. The aim in view is not only to cure the crippled child of his disease and lessen his infirmity, but also to educate him into a self-supporting individual by teaching him arts and crafts within his physical limitations. Dr. Biesalski has himself played a prominent part in inaugurating the statistical inquiry and in superintending the arrangement of the collected data, a work which occupied three years, and is now embodied in 316 pages of statistical tables. There is an excellent bibliography. The work is one of permanent value, and should be carefully studied by all those concerned with social movements or practically interested in the physical welfare of tuberculous and other children.

EMILIA V. DE VOSS.

TUBERCULOSIS AND INSANITY.

Dr. Goring's monograph¹ is the fifth of a series of "Studies in National Deterioration," issued by the Galton Laboratory for National Eugenics of the University of London. His important conclusions with respect to tuberculosis are based on a study of 723 family histories of convicts, and in insanity of 1,433 similar histories. It is shown that the tuberculous diathesis is inherited at the same rate as other physical characters in man. The prevalence of pulmonary tuberculosis lies between 8 and 10 per cent. of the general population. There is no evidence of marital infection. Environment gives no definite evidence of affecting the liability to infection. Tuberculosis is prevalent equally in the poorer and in the richer classes. It is not more frequent in workers in a consumptive hospital than it is in individuals with the same degree of diathesis in the general population. The inheritance of the insane diathesis presents a co-relation between adults and offspring sensibly the same as the co-relation of phthisis. The prevalence of insanity is greater than the value assigned by Heron. It must be remembered, however, that in dealing with insanity the class of persons investigated—viz., criminals—cannot reasonably be compared with the normal population in this respect.

HAMILTON MARR, M.D.

THE CONQUERING OF TUBERCULOSIS.

Professor Otis has achieved conspicuous success in the difficult task of preparing a plain, scientific and readable manual on the nature, significance, prevention and management of tuberculosis.² His is a popular work intended for the thoughtful layman, and all such will find it interesting, suggestive, and thoroughly practical. As might be expected from so reliable and experienced a physician, the work is

¹ "On the Inheritance of the Diatheses of Phthisis and Insanity: A Statistical Study based upon the Family History of 1,500 Criminals." By Charles Goring, M.D., B.Sc. Pp. 28. London: Duban and Co. 1909. Price 3s.

² "The Great White Plague: Tuberculosis." By Edward O. Otis, M.D., President of the Boston Tuberculosis Association. Pp. 321. New York: Thomas Y. Crowell and Co. 1909. Price \$1.00.

absolutely trustworthy, and, while full of facts and figures, possesses high literary merit, and is marked by a charm of presentation which will stimulate many to become enthusiasts in the Anti-Tuberculosis Campaign. This helpful volume should be in the hands of all working for the extermination of the "Silent White Plague."

T. N. KELYNACK, M.D.

THE PREVENTIVE TREATMENT OF TUBERCULOSIS.

Dr. Henry Clark has provided in his treatise¹ a clear account of the modern methods of diagnosis, prevention, and treatment of tuberculosis. After referring to the importance of early diagnosis and the assistance given by the ophthalmic and cutaneous reactions to tuberculin, the author proceeds to the methods of prevention, and states that chief reliance must be placed on the suppression of tuberculosis in cattle, and on the segregation of consumptive patients, which, in his opinion, can be done most effectively by public bodies without necessarily having recourse to compulsory measures. Regarding treatment, a careful account is given of tuberculin administration. The author prefers the German method of pushing the drug until a febrile reaction occurs. He believes that a rise of temperature is quite as rapid and delicate a test of an excessive dose as the opsonic index, and is of opinion that the latter may safely be dispensed with, and reliance placed on the temperature-chart alone. This brings the tuberculin treatment within the reach of the general practitioner, as the technical and expensive estimation of the opsonic index is no longer required.

R. MURRAY LESLIE, M.D.

THE DYSPEPSIA OF PHTHISIS.

Dr. Habershon's new work² is a comprehensive yet concise, intelligible and serviceable manual on gastric affections, exactly suited to the needs of the student and the necessities of the practitioner. We know of no other work of like size on diseases of the stomach which is so up-to-date, explicit, and helpful. It is a volume which should be studied by all who have to deal with consumptive subjects. A special chapter is devoted to affections of the stomach associated with tuberculosis. Dr. Habershon describes three forms of functional gastric disorder in the tuberculous subject : "The *atonic dyspepsia* of debility with general gastric insufficiency ; the *hypersecretion* of gastric juice causing acidity and a tendency to acute gastric catarrh ; and the less important *biliary indigestion*, to which anyone is liable who is suddenly deprived of exercise." The author endorses the dictum of Louis and Andral that "of all the organs, the digestive tube, next to the lungs, presents the most common lesions in phthisis." The organic

¹ "Studies in Tuberculosis." By Henry Clark, M.D. Pp. 59. London : Archibald Constable and Co. 1909. Price 5s. net.

² "Diseases of the Stomach : A Manual for Practitioners and Students." By S. H. Habershon, M.A., M.D., F.R.C.P. Pp. 565, with 8 coloured and 11 black-and-white plates. London : Cassell and Company, Limited. 1909. 9s. net.

gastric lesions met with in pulmonary tuberculosis are fully described. Clinicians will gain much help from the sections on "The Symptoms of Vomiting in Pulmonary Tuberculosis," and "Mechanical Vomiting, or Vomiting due to the Violence of Cough." The directions for treatment are excellent. Altogether, the volume is a notable one, and should have a place in every practitioner's library.

AIR AND HEALTH.

Dr. Macfie's treatise on air and its relation to health¹ forms the latest addition to "The New Library of Medicine," issued under the general editorship of Dr. C. W. Saleeby. It is a popularly-expressed study of the atmosphere, and describes in easily-understood language man's hygienic associations with his aerial environment. In a succession of well-designed chapters the chemical composition of pure air, respiration, air-pressure, temperature, humidity, thermolysis, impure air, ventilation, climate, and the like, receive lucid exposition. The volume is full of information and suggestion both for those who recommend and for those who live the open-air life. An excellent description is given of the open-air treatment of consumption, with quotations from the works of the pioneers, Bodington and MacCormac. Details are also given respecting the establishment of open-air schools for children. Medical practitioners as well as the laity will appreciate this well-designed and carefully-executed work.

TUBERCULOUS CHILDREN.

A new edition of Dr. Eustace Smith's well-known and much-valued work on the diseases of children has just appeared.² Large portions of this comprehensive treatise have been rewritten and rearranged in the light of modern advance. As the author states in his preface, his desire has been "to make the work a trustworthy clinical guide." It is essentially a clinician's work, for pathological considerations have been mainly eliminated. This we regret, and we could have wished that references had been given to recent researches. We are surprised to find a brief chapter given to "scrofula or struma," terms which we thought and had hoped were dead and buried. The chapter on tuberculosis we think might well have been longer, for, as the author states, "it is in infancy and childhood that the body is most susceptible to the inroads of the specific bacillus, and that the evil effects of the microbe are so widespread and so disastrous." The clinical picture of tuberculosis is graphically portrayed. Tuberculin is not mentioned in the index, and direction as to its employment is conspicuous by its absence from the text. This is to be regretted, for it is a matter on which practitioners require direction. The whole work, however, is a notable one, and will be a valuable acquisition to a practitioner's library.

¹ "Air and Health." By Ronald Campbell Macfie, M.A., M.B., C.M. Pp. 345. London: Methuen and Co., 36, Essex Street, W.C. 1909. Price 7s. 6d. net.

² "A Practical Treatise on Disease in Children." By Eustace Smith, M.D., Physician to the East London Children's Hospital. Pp. 833. Third edition. Edinburgh and London: William Green and Sons. 1909.

SANATORIUM TREATMENT.

Dr. C. Muthu has been well advised to publish his "record of ten years' observation and work in open-air sanatoria."¹ His methods, opinions, and conclusions, will be of interest to all engaged in the hygienic, institutional management of consumptives. The work also provides practitioners with a reliable survey of sanatorium routine and prospects. Many tuberculous subjects should profit by a study of this manual. The scientific aspects of the problem are well presented. Some will think that the author minimizes unduly the risks of tuberculous infection, and many will disagree with his condemnation of compulsory notification. We are glad, however, to find that the importance of the nature of the human soil is insisted on. The principles and practice of open-air treatment are ably presented, and abstracts of a number of the author's cases are given. Dr. Muthu is an advocate of the employment of formaldehyde, and has modified Kuhn's suction mask, whereby formalin and other volatile vapours may be inspired. Electro-static treatment is also advocated as a means of improving metabolism in pulmonary tuberculosis. The work is admirably printed, well illustrated, and is to be procured at a comparatively low price.

THE MAKING OF A HOSPITAL.

Dr. Donald J. Mackintosh's guide² to the evolution of a general hospital will appeal, not only to doctors and architects, but to all desirous of understanding and assisting in the maintenance of these social necessities. The author is an expert with special experience, wide outlook, and intimate knowledge of men and all matters pertaining to hospital management. His work must become the standard handbook. All sections and departments are thoroughly dealt with, and in appendices inventories and practical details are provided which will be of the greatest service. There are numerous plans and many illustrations. The printing, paper and general get-up of the book are first-class. In the office of every hospital this handsome and helpful volume should have a place.

DENTAL EMERGENCIES.

Those who have had practical experience of sanatoria, hospitals and dispensaries for consumptives will know how prevalent extensive dental caries and conditions of oral sepsis are among this class of patient. Indeed, treatment of many tuberculous subjects is seriously hindered by the lamentable condition of teeth and mouth existing. In some country sanatoria the resident medical officer is often obliged, however reluctantly, to undertake the rôle of the dentist. For these, and, indeed, for all likely to be called upon to perform emergency

¹ "Pulmonary Tuberculosis and Sanatorium Treatment." By C. Muthu, M.D., M.R.C.S., L.R.C.P., Physician, Mendip Hills Sanatorium. Pp. xii+201, with 10 plates and 6 figures. London: Baillière, Tindall and Cox. 1909. Price 3s. 6d. net.

² "Construction, Equipment, and Management, of a General Hospital." By Donald J. Mackintosh, M.B., M.V.O., Medical Superintendent of the Western Infirmary, Glasgow. Pp. xii+152, with plans and illustrations. Edinburgh and Glasgow: William Hodge and Co. 1909.

dental operations, Mr. C. E. Wallis's illustrated handbook will be invaluable.¹ It is eminently practical, and both by letter and figure affords just the helpful instruction and direction which some time or other will be absolutely necessary for all general practitioners. The work is in every way admirable.

YEAR-BOOKS, CALENDARS, AND DIARIES.

With the coming of every New Year, the number and variety and attractiveness of the volumes published to serve as counsellors and remembrancers for a brief twelve months, increases. Among those likely to be of assistance to our readers, the following deserve special mention :

"Hazell's Annual"² more than ever merits the designation "indispensable," for it contains reliable information on practically every topic of the day. A special feature of this year's issue is the informing series of signed articles. Sir Oliver Lodge writes on the New Physics. Much attention has been devoted to Social Questions. In the excellent survey of Medicine and Surgery particulars are given of administrative methods against tuberculosis. A Directory is provided of Hospitals and Dispensaries in London.

"The Wellcome Photographic Exposure Record and Diary, 1910,"³ should be in the possession of all open-air livers wise enough to have added to their delights in Nature the revealing and recording powers of a good camera. Many physicians are ardent photographers, and to them this year-book will be specially helpful. It is a unique production, and into a minimum of space there is crowded a maximum of information. The simple yet efficient calculator is not the least important feature. Every amateur photographer should possess a copy.

The well-known firm of John Walker and Company, of Diary fame, have recently introduced an admirable series of "University Expert Manuscript Books," which, although designed for the student attending classes and lectures, will be found of the greatest service to medical practitioners, authors, lecturers, and others desiring a convenient, clean, compact form of manuscript, which can be retained in proper order or detached at will. Walker's "Letterettes" should be known to every medical man and all busy correspondents. Every inmate of a sanatorium should possess a "Letterette Tablet," a luxury for the lazy and an indispensable for the invalid.⁴

It is rather surprising that more open-air enthusiasts and sanatorium patients do not take up the fascinating study of astronomy.

¹ "An Atlas of Dental Extractions, with Notes on the Causes and Relief of Dental Pain. Designed for the Use of Medical Students and Practitioners." By C. Edward Wallis, M.R.C.S., L.R.C.P., L.D.S., Assistant Dental Surgeon, King's College Hospital. Pp. 26, with 11 plates. London : J. and A. Churchill. 1909. Price 3s. 6d. net.

² "Hazell's Annual for 1910 : A Cyclopædic Record of Men and Affairs." Edited by Hammond Hall. Twenty-fifth year of issue. Pp. 608. London : Hazell, Watson and Viney, Ltd., 52, Long Acre, W.C. 1910. Price 3s. 6d. net.

³ "The Wellcome Photographic Exposure Record and Diary" is published by the well-known manufacturers of "tabloid" photographic material, Messrs. Burroughs, Wellcome and Co., Snow Hill, London. Price 1s. net.

⁴ Full particulars on application to Messrs. John Walker and Co., Ltd., Farringdon House, Warwick Lane, London, E.C.

Many persons now sleep out in the open, but comparatively few take any intelligent interest in the heavens. Three recent publications should serve to stimulate study of the stars : "The Stars from Year to Year" provides charts of the sky for each month of the year and furnishes other information ; "The Star Almanac for 1910" gives considerable astronomical data, four star charts, and photographs of the comet of 1901 and the moon ; "The Star Calendar for 1910" is an ingenious movable card indicating the constellations of the Northern Hemisphere. These records have all been designed by Mrs. H. Periam Hawkins.¹

Among the numerous varieties of diaries now available, the "Onoto" Diaries occupy the foremost place.² For compactness, completeness, and convenience, they are unsurpassed. A whole week's engagements can be seen at a glance. In addition to the monthly index, there is an alphabetical index for the registration of addresses, telephone numbers, and such-like memoranda. The paper and printing are of the best, and the limp binding and compact size and useful shape make these diaries perfect for the pocket and just the thing for daily use.

¹ Published by Messrs. King, Sell and Olding, Ltd., 27, Chancery Lane, London, E.C. Prices : 1s. net, 3d., and 1s. net, respectively.

² Published by Messrs. Thomas De La Rue and Co., Ltd., 110, Bunhill Row, London, E.C. Price 6d. to 2s. 6d. per copy.

PREPARATIONS AND APPLIANCES.

APPLIANCES FOR THE PATIENT.

WITH the increase of knowledge, reliance in drugs diminishes, and confidence in the curative power of natural forces grows from more to more. This is well, for thoughtful men and women are realizing the necessity for a study of the elementary principles of hygiene, and many influences are encouraging the habitual practice of methods of life which afford the surest means, not only for restoring health, but for preventing disease. Numerous new inventions greatly facilitate the rational management of the sick and assist in the protection of the sound. Some of these are indicated in the following paragraphs:

THE "REFEREADER" is an ingenious, well-constructed, easily-adjusted, and portable folding book-rest, which will prove a boon to



patients, and will be of real service to those who read and work in the open air.¹ Even the strong and healthy will find that such a contrivance adds much to the comforts and joys of life. Its general

¹ Supplied by Messrs. Partridge and Cooper, Ltd., 191, 192, Fleet Street, London, E.C. Prices: Polished figured oak, with brass fittings, 10s. 6d.; unpolished mahogany, with nickel fittings, 15s.

form and use for reading in bed is indicated in the illustration on p. 57. The "Refereader" will also be found convenient as a sketching easel or as a music-stand. Having used this novel and effective stand with much satisfaction, we can strongly commend it. It forms an ideal present. Every medical man should possess one.

THE "ADAPTABLE" HOT-WATER BOTTLE AND BED-WARMER should prove popular not only in hospitals and sanatoria, but for use in private dwellings.¹ There are no rough edges or sharp projections, as in the old-fashioned type. Circular in shape and with flat sides, this new form of warmer provides a large surface which can be adapted to almost all needs. The screw stopper with rubber ring prevents all possibility of the escape of the contents, and the swing handle allows of easy and comfortable conveyance. It is available in six sizes, varying from one which can be carried in a muff to one containing 3 quarts. For baby-carriages, warming of beds, sleeping-bags, carpet hassocks, and for use in carriages and motors, these warmers should be in great demand. For patients undergoing open-air treatment they will be invaluable. We have tested them, and can highly recommend them.



THE "SHAW" INHALER² possesses many advantages over the old-fashioned forms of jug-inhalers. It is simple in construction, safe in use, and very effective. Its general appearance and method of employment is indicated in the adjoining figure. The inspired air enters through the perforations situated near the surface of the water, on which special "inhalogens"—fluids, emulsions, and unctuous media, supplied in bottles, capsules, and collapsible tubes—can diffuse as a thin film. Having tested this new inhaler, we believe it will prove of much service in the alleviation of affections of the respiratory system. It should be very popular in

hospitals and sanatoria. Medical practitioners will find it a valuable adjunct in private practice.

THE "KIRBY" FEEDING-CUP³ has been designed in order to insure a strictly regulated and hygienic administration of food or medicine to patients, and is a great improvement on the old-fashioned, crude, and ineffectual appliances usually employed. It consists of a graduated inner vessel or container, which fits into a somewhat boat-shaped and marked cup. It is easily manipulated, and possesses many advantages, the chief being that the patient does not see the food, only a predetermined quantity is given at a time, none of the rejected portions can re-enter the cup, and the whole can be easily cleansed. For the administration of medicine to or the feeding of advanced

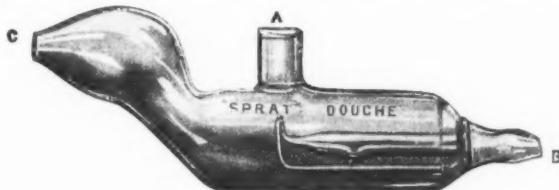
¹ Manufactured by the Fulham Pottery and Cheavin Filter Co., Ltd., Fulham, London, S.W. Prices: 1s. 1d. to 2s. 9d. each.

² Supplied by B. C. Macphersons, 89, Farringdon Street, London, E.C. Price 3s. 6d.

³ Supplied by Messrs. H. and T. Kirby and Co., Ltd., 14, Newman Street, London. Price 3s. each.

cases of consumption and other bed-fast patients this form of cup will be invaluable.

THE "SPRAT" DOUCHE,¹ illustrated in the accompanying figure, is a novel combination of douche-spray and atomizer for watery, oily, or other medicaments. It is made of glass, is easily cleaned, and



does not readily get out of order. In the satisfactory treatment of naso-pharyngeal affections it will be most helpful. It forms an admirable medium for the application of the justly popular GLYCO-THYMOline.

The new "NEBULIQUE" SPRAY² should prove popular for laryngeal, pharyngeal, and nasal purposes, for it not only produces a fine cloud with heavy oils, aqueous and spirituous solutions, but possesses also the great advantages of acting when held in any position, using the smallest

amount of liquid, and being readily sterilized. For compactness and effectiveness it will be hard to beat.



The safe collection and sanitary disposal of the sputum of consumptives are hygienic measures of the first importance. Numerous varieties of SPUTUM CUPS, FLASKS, OR CUSPIDORS, have been introduced. We have received specimens of several varieties of hygienic

¹ Supplied by Messrs. Thomas Christy and Co., 4-12, Old Swan Lane, London, E.C.

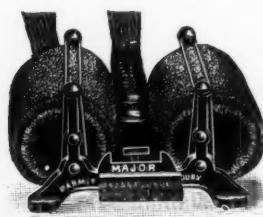
² Supplied by Messrs. C. J. Hewlett and Son, Ltd., 35-42, Charlotte Street, London, E.C.

paper goods for tuberculous patients, including one similar to that illustrated in the figure on p. 59.¹ These goods are used extensively in the United States of America, and undoubtedly meet a real need.

REQUISITES FOR THE SANATORIUM AND THE HYGIENIC HOME.

Dust is the common conveyer of tubercle. The prevention of the accumulation of dust and dirt, and the speedy collection of "matter out of place," are necessary factors in the elimination of tuberculosis. Especially where consumptive cases dwell is it essential to exercise the most scrupulous care in maintaining the strictest cleanliness. In this Bennett's new patent HYGIENIC DUST SUCTION BRUSH² will assist. The brushing material consists of Louffa, which, being cellular, collects dust well and can be washed after use. These brushes are available in various shapes and sizes, but for the cleansing of the walls of the consumptive's room the hinged-head pattern is to be recommended.

The open-air life, in spite of its many benefits, is not altogether without disadvantages. In winter especially much dirt and mud inevitably collect upon the boots, and is in danger of being brought into the dwelling. For sanatoria as well as for private houses the "MAJOR" PATENT REVOLVING MAT FRAME AND STEEL WIRE Boot-CLEANER³ will prove a welcome adjunct. Its general structure will be



understood by a glance at the adjoining illustration. Two circular cocoa-fibre brush-mats are so pivoted that they open out and revolve when the booted foot is inserted between them. A scraper removes dirt from the bottom of the boot, while the wires at the top enable tenacious mud to be detached. The "Major" may be placed in the hall or porch, or can be left out of doors without suffering harm, for the mats are not affected by the weather, and, being suspended above the ground, readily dry, and the dirt falls off as the mats are worked round. To meet the requirements of town-houses and smaller country establishments, and to afford a size better suited for ladies and children's use, a special form of this ingenious revolving mat has been introduced. After thoroughly testing this neat and serviceable contrivance, we have no hesitation in strongly recommending it.

THE FOLDEASY TABLE as here shown⁴ forms an ideal companion

¹ Full particulars may be obtained from Messrs. Stone and Forsyth, 67, Kingston Street, Boston, Mass., U.S.A., and the Burnitol Manufacturing Company, Cambridge, Mass., U.S.A.

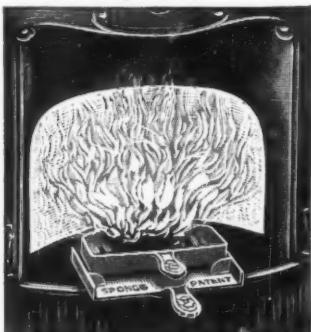
² Full particulars may be obtained on application to the Bennett's Patent Hygiene Dust Suction Brush Company, West Malling, Kent.

³ Manufactured by Messrs. P. J. Parmiter and Sons, Ltd., Agricultural Engineers, Station Works, Tisbury, Wilts. Prices according to size—19s. to £1 19s.

⁴ Supplied by Messrs. Johnson, Taylor and Co., 35, Coleman Street, London, E.C. Prices, 4s. 9d. to 14s.

to the open-air couch or sanatorium lounge. It is made of deal, stained walnut, or hardwood mahogany coloured and polished. It folds up quite flat, and opens automatically by simply lifting the top. Moreover, it is strong, rigid without bolts or buttons for fixing, provides a rest for books and sputum flask, and is remarkably cheap. For hospital and sanatorium use this table will be invaluable.

"DOMES OF SILENCE" or INVISIBLE CASTORS¹ are very simple but most satisfactory contrivances, facilitating the easy movement of heavy chairs and other articles of furniture. They will be appreciated in every sick-room, and, as we can ourselves bear witness, add greatly to the comfort and preservation of the ordinary home.



SPONG'S PORTABLE FUEL-FIRE² is an ingenious and effective contrivance whereby a bedroom or other apartment may be speedily, cleanly, and economically warmed. It consists of a tray with aluminium reflector, and a grid on which special fuel is burnt, as indicated in the accompanying figure. The apparatus weighs 5 pounds, and will suit any grate. We have tested this novel appliance, and can speak well of it.

TUBERCULIN PREPARATIONS.

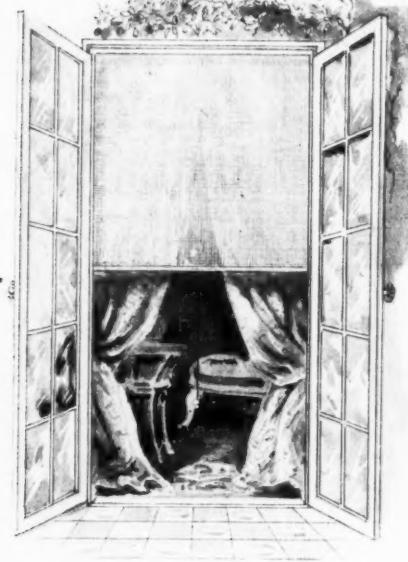
Medical opinion both in this country and abroad seems to be setting strongly in favour of the administration of tuberculin in certain carefully selected cases of tuberculosis. Both in diagnosis and treatment, tuberculin undoubtedly is of service. It is, however, essential that it should be employed with judgment, and only absolutely reliable preparations should be used. Fortunately there is no difficulty in obtaining these. Messrs. Parke Davis and Co. have introduced convenient discs of purified tuberculin for the conduct of the ophthalmic reaction. They are put up in little tubes containing ten

¹ Full particulars on application to the Invisible Castor Company, Tower House, 40, Trinity Square, London, E.C. Price, set of four, 6d.

² Manufactured by Messrs. Spong and Co., Ltd., Braemar Road, South Tottenham, N., and 98, High Holborn, London, W.C. Price, complete, with ten blocks of "Kalax" patent fuel, 8s. 6d. Additional supplies of fuel, 4d. per packet of ten blocks.

discs each, and are also protected by an outer wooden case. Particulars are given as to use with each case.¹ The same firm also supply a tuberculin ointment for the application of the Moro test. Messrs. Burroughs, Wellcome and Co.² have introduced a "Wellcome" Brand of Tuberculins in convenient phials, providing in the most reliable and easily manipulated form carefully graduated doses of each kind of tuberculin for diagnosis or treatment. Tubercle bacilli are also supplied in suitable preparations for laboratory tests.

A NOVEL DUST-SCREEN.



THE "DUSTORFLI" HYGIENIC SCREEN³ is the invention of Mr. E. H. Hobling, and should be known to all who preach or practise open-air methods. It provides a fine gauze curtain, which can be arranged to exclude coarse dust and flies. For hospitals, nursing homes, offices, as well as private dwellings, this screen offers many advantages. Its use in connection with casement windows, such as are now in general use in sanatoria, is shown in the accompanying figure. There is a future for this ingenious contrivance. Especially in tropical and subtropical districts it will be of great value.

OPEN-AIR COTS FOR CHILDREN.

The gospel of the open-air life is accomplishing much for the salvation of child-life. All sorts of contrivances are being introduced in order to facilitate hygienic measures for children. Among the most useful of recent inventions are THE CALLAPSOCRADLE and THE CALLAPSOCOT.⁴ Each consists of a strong folding framework, fitted with a leather cloth or Willesden canvas hammock, forming an ideal

¹ Full particulars may be obtained on application to Messrs. Parke Davis and Co., Beak Street, Regent Street, London.

² London : Wellcome Physiological Research Laboratories, Brockwell Hall, Herne Hill.

³ Full particulars may be obtained from Messrs. Morris and Birch, 57, Ludgate Hill, E.C.

⁴ Manufactured by the Alesbury Callapsoware Company, 153, Old Street, London, E.C.

resting-place for a baby or young child. No elaborate bedding is required, for the hammock forms its own spring. Easily adjusted, quickly folded up, washable, light, and inexpensive, these common-sense cradles and cots provide means whereby children may be put to rest under the best conditions, in the garden, by the seaside, or, indeed, wherever it is thought desirable. Having tested them, we commend them highly. They will be of service to children everywhere, and will lighten the burdens of parents and nurses.

PHYSICAL CULTURE.

Many systems and contrivances to encourage physical culture are now available, and wise discrimination is needed in making a choice.

In the prevention and treatment of tuberculosis, carefully graduated and supervised exercise may be of great assistance. Our attention has recently been drawn to the *LOOP DEVELOPER*,¹ and we have been enabled to make personal tests of it. As will be seen from the accompanying figure, the apparatus is exceedingly simple. The principle employed is that of resistance. The loop is used in a series of exercises of which illustrations may be obtained. It is made of the finest steel, nickel-plated, and is available



in three strengths. The Invalids' Loop is intended for patients and persons confined to bed, and those requiring exercise without much exertion. We believe this novel exerciser will be of service to many.

"MASSOLETTES."

Curdled milk among certain peoples has for long been a valued agent both in health and disease. We now know that lactic acid organisms can exercise destructive influence on deleterious micro-organisms which flourish in the intestinal tract, and by their toxic products give rise to numerous disorders. Much ingenuity has been displayed in providing means whereby this fact can be rendered a practical therapeutic measure. Certainly the most attractive, convenient, and popular form of introducing the organisms necessary for the production of intestinal lactic cultures has been discovered by Messrs. Arthur H. Cox and Co., of Brighton. This well-known firm now supply the bacillus of Massol in a high state of activity in a chocolate-covered, delicately-flavoured sweetmeat, to which the registered name of "Massolettes" has been given.² Having tried

¹ The Loop Developer is manufactured by Messrs. Jonas Woodhead and Sons, Leeds. Price 12s. 6d.

² "Massolettes" are supplied in dainty boxes containing two dozen, price 2s. 6d. Full particulars may be obtained on application to Arthur H. Cox and Co., Ltd., Pill and Tablet Manufacturers, Brighton.

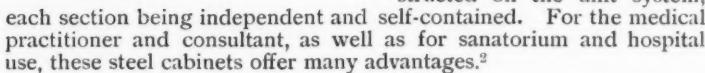
this elegant preparation, we believe it will be of real service in the management of many of the gastro-intestinal derangements which are so common and detrimental in consumptive and other tuberculous subjects.

THE PRESERVATION OF CLINICAL RECORDS.

In hospital, sanatorium, or private practice, some form of scientifically constructed file for the preservation and classification of case papers is essential. Among the many varieties claiming special advantages, THE "SU-TALL" VERTICAL FILE merits honourable mention.¹ For a medical practitioner especially it offers many advantages, not the least being the sectional arrangement allowing for the addition of units as required. Having had personal experience of this file, we can give it unqualified praise.

Among the many new appliances now available for the systematic ordering of records, there is one form which in our experience is unique, and which, after practical experience, we have no hesitation in recommending. It is the STEEL FILING CABINET.

These cases and cabinets are strong, secure, cleanly, easily worked, afford protection from dust, damp, and parasites, and will not burn. They are constructed on the unit system, each section being independent and self-contained. For the medical practitioner and consultant, as well as for sanatorium and hospital use, these steel cabinets offer many advantages.²



each section being independent and self-contained. For the medical practitioner and consultant, as well as for sanatorium and hospital use, these steel cabinets offer many advantages.²

PHARMACEUTICAL AND THERAPEUTICAL PREPARATIONS.

GUAIACOSE is an excellent nutrient, stimulant, and alterative for the treatment of consumptives and other tuberculous subjects. It consists of *somatose*, an easily-assimilated beef preparation containing 90 per cent. of albumoses, and 5 per cent. of *guaiacol-calcium-sulphonate*, which is a soluble, non-irritating guaiacol compound with calcium. This combination provides a valuable preparation which can be administered with water or in milk, cocoa, and soup. Children take it readily. It increases appetite, leads to putting on of weight, lowers temperature, and makes for general improvement in metabolism. Creasote is a particularly valuable drug in the treatment of consumption, but often produces gastro-intestinal irritation, but in the form of guaiacose it can be given freely with no fear of such disturbance.³

¹ Supplied by Messrs. Johnson, Taylor and Co., 35, Coleman Street, London, E.C. Price, complete, quarto size, 33s.

² The Patent Bulldog Steel Filing Cabinets are manufactured by Messrs. Jones Brothers and Co., of Wolverhampton. London office: Bangor House, 66, 67, Shoe Lane, E.C.

³ Guaiacose is supplied in 5-ounce bottles, price 2s. 9d. each. Full particulars and samples will be sent to any medical practitioner on application to the Bayer Company, Ltd., 19, St. Dunstan's Hill, London, E.C.

DIAMALT is a highly active, nutritive, and palatable extract of malt in pure form. In diastatic action it is unusually efficient. It is said to be prepared only from the finest selected barley and malt under strict scientific supervision. For medicinal purposes it seems to be one of the best malt preparations on the market. In the treatment of consumption and tuberculous ailments generally, as well as for other affections characterized by wasting and deranged metabolism, Diamalt will be of real value. Special terms, we understand, are to be given to hospitals. Diamalt may also be obtained in combination with cod-liver oil, free from flavouring and without the addition of preservatives or other foreign ingredients.¹

PUMILINE is a pine preparation of considerable value in the management of consumptives. It is a clear, fragrant, ethereal liquid admirable for inhalation, and particularly useful for internal use where there is offensive sputum, as in some cases of consumption and in chronic bronchitis, bronchiectasis, pulmonary gangrene, and the like. It is also beneficial in the relief of morbid conditions involving the respiratory passages. As jujubes it can be given in a form which is convenient, pleasant, and effective. The "Essence" may be administered in drops on a piece of sugar. Pumiline may also be obtained in combination with creasote, eucalyptus, terebene, etc., and can be employed for inhalation on a simple form of inhaler which is specially provided.²

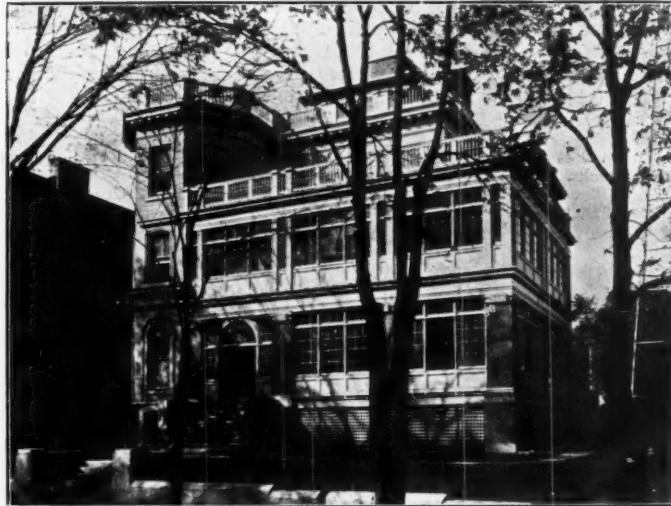
¹ Diamalt is supplied by the British Diamalt Company, 11 and 13, Southwark Street, London, S.E.

² Pumiline preparations are supplied by Messrs. Stern and Co., of Cheadle Hulme, Manchester.

NOTES.

THE ROYAL EDWARD INSTITUTE FOR TUBERCULOSIS.
MONTREAL, CANADA.

THE establishment of this Institute marks an important advance in the anti-tuberculosis campaign in the Dominion of Canada, and will serve as a model, we trust, for many other portions of the British Empire.¹ Through the kindness of Dr. J. H. Elliott we have been favoured with the following note on this interesting institution,



THE ROYAL EDWARD INSTITUTE FOR TUBERCULOSIS, MONTREAL.

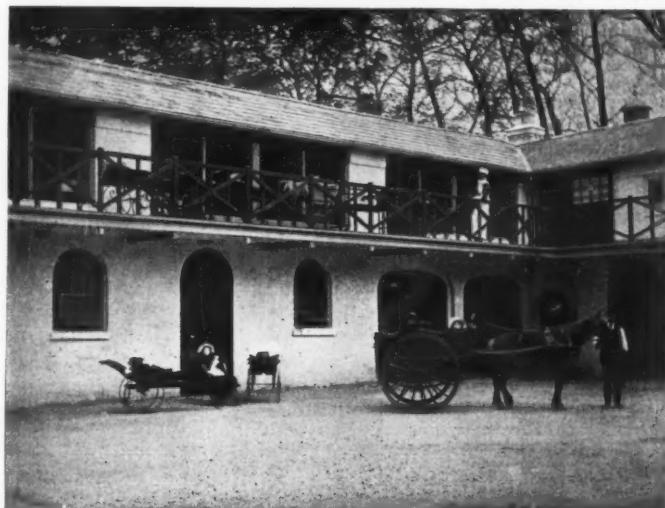
together with the photograph from which the accompanying illustration has been prepared:

"That the interest of His Majesty King Edward VII. in anti-tuberculosis work is not confined to Great Britain is shown in his gracious permission to the Montreal League for Prevention of Tuberculosis to name their new headquarters 'The Royal Edward Institute.'

¹ For full description see "The Anti-Tuberculosis Movement in Montreal and the Foundation of the Royal Edward Institute: A Retrospect and a Prospect." Pp. 21. Illustrated. President of the Institute: Sir George Drummond, K.C.M.G., C.V.O.; Hon. Secretary: E. S. Harding, M.D.



GENERAL VIEW OF THE WOODLANDS SANATORIUM FOR CHILDREN.



THE WOODLANDS SANATORIUM FOR CHILDREN : WEST OPEN-AIR
WARD AND VERANDA.

68 THE BRITISH JOURNAL OF TUBERCULOSIS

Two institutions in Canada now bear the name of our revered Sovereign, and four associations are honoured in having him as patron. The Royal Edward Institute was opened by His Majesty. Direct cable and telegraph communication had been secured, so that when His Majesty threw in the switch at West Dean, Chichester, a lever dropped in Montreal which turned the electric current on the building, opening the doors and lighting the building, while another mechanism unfurled the royal standard. A military guard of honour was in attendance. Space forbids reference to the opening ceremonies further than to mention that Dr. R. W. Philip came from Edinburgh to give the opening address. The Montreal League has cared for 1,700 patients during the past six years. The new Institute, which is for the 'study, prevention, and treatment of tuberculosis,' has been carefully planned. On the first floor are the examining rooms for the medical staff, a fully equipped laboratory, record-room, office, and board-room; in the rear, a well-equipped kitchen and pantry. The first floor is designed for class-rooms and lecture-halls; the second floor is devoted to apartments for the nurses in residence. The roof has been finished to serve as a day camp, while on two sides of the building on the ground floor and first floor are broad galleries with movable glass fronts, for the use of the patients. That on the ground floor has a fireplace, by means of which the gallery will serve as an open-air waiting-room for patients even in the coldest weather. The equipment is thorough, and Lieutenant-Colonel Busland has spared neither time nor expense to make this, the gift of himself and his sisters to the League, all that could be desired as a centre for anti-tuberculosis work in the city of Montreal."

A NEW SANATORIUM FOR TUBERCULOUS CRIPPLES.

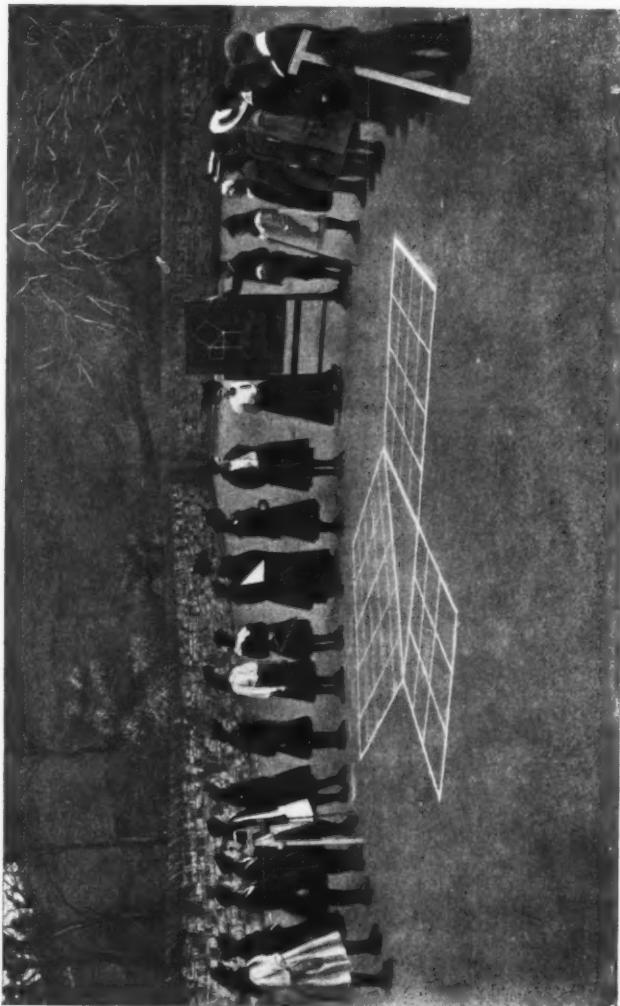
Open-air sanatoria and schools for children are rapidly increasing. We have recently had an opportunity of inspecting the excellent open-air wards at The Woodlands, presented to the Birmingham and District Children's Union by Mr. George Cadbury. All desirous of learning how open-air work may be accomplished in an economical and most effective manner should visit this attractive place. The accompanying illustrations indicate on p. 67 something of the character and arrangement of the open-air wards.¹

TEACHING IN THE OPEN AIR.

The principles and practices of the open-air life are slowly and quietly revolutionizing manner and methods of existence. The coming of the open-air school has demonstrated even to the most sceptical and neglectful the benefits of the hygienic life for children. Already educational procedures are being modified and adapted to meet the new conceptions and conditions. We desire to draw the attention of

¹ The illustrated report of the Birmingham and District Crippled Children's Union may be obtained from the Central Office, Cornwall Buildings, 45, Newhall Street, Birmingham, or The Woodlands, Northfield, near Birmingham. We are indebted to Mr. Frank Mathews, the secretary, for the loan of the blocks from which the accompanying illustrations have been prepared.

all thoughtful parents and progressive educationalists to the pioneer



TEACHING IN THE OPEN AIR: EUCLID ON THE FLOOR.

work of Mr. J. Eaton Feasey.¹ He has prepared an ideal manual for

¹ "In the Open Air: A Series of Outdoor Lessons in Arithmetic, Mensuration, Geometry, etc., for Primary and Secondary Schools." By J. Eaton Feasey, Headmaster of the Ranmoor Council School and a Lecturer in Education in the University of Sheffield. London: Sir Isaac Pitman and Sons, Ltd., 1, Amen Corner, E.C. 1909. Price 1s. 6d. We are indebted to the courtesy of the author and publishers for the loan of the blocks enabling us to reproduce the accompanying illustrations.

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teachers, detailing how instruction may be imparted under the most enjoyable and health-giving conditions. The accompanying two



TEACHING IN THE OPEN AIR : MEASURING THE GARDEN PLOTS.

illustrations, reproduced from his book, will indicate better than any review the excellence and attractiveness of the studies described.

STAMPS AS STIMULUS.

Sláinte, Sláinte, Sláinte.



THEY WILL
NOT CARRY ANY
KIND OF MAIL

BUT ANY KIND
OF MAIL WILL
CARRY THEM.

"STICK THIS STAMP WITH MESSAGE BRIGHT
ON EVERY CHRISTMAS LETTER
HELP THE TUBERCULOSIS FIGHT
AND MAKE THE NEW YEAR BETTER."

ISSUED BY THE WOMEN'S NATIONAL HEALTH ASSOCIATION OF IRELAND

Much ingenuity and wisdom is being displayed in the discovery of new weapons for the campaign against consumption. Through the courtesy of Her Excellency the Countess of Aberdeen, we have received interesting particulars of the "Christmas Stamp Scheme," which the Women's National Health Association of Ireland, copying the methods of our American cousins, have adopted as a means of raising funds for, and arousing interest in, anti-tuberculosis work. The accompanying illustrations point the moral, and indicate the method better than any lengthy description we could give. We trust so worthy an example may be followed in other parts of the Empire.

Dr. S. A. Knopf has also kindly sent us the block from which has been prepared the accompanying illustration of the Red Cross Christmas stamp of the United States of America. It "is not good for postage. It will not carry any kind of mail, but any kind of mail will carry it except matter going to England or Germany. The use of the beautiful Red Cross stamp carrying Christmas and New Year's greetings gives an excellent opportunity to every one to help the anti-tuberculosis cause according to his means."¹



IRELAND'S CHRISTMASTIDE HEALTH STAMPS.

PATHS OF PROGRESS.

There is no royal road to either wealth or health; but patience and persistency, when yoked to knowledge, can find a way into apparently the most impenetrable problems: so is it with tuberculosis.

Tuberculosis Exhibitions and Conferences are being held in various districts of the Metropolis with great advantage. An important gathering recently met at Oxford to inaugurate what we trust may be an active anti-tuberculosis campaign throughout the provinces.²

The Survey, an admirable weekly journal dealing with social, charitable, and civic problems, and devoting much space to tuberculosis in the number for November 20, 1909,³ gives serviceable information respecting "The Value of the Tuberculosis Exhibition," by E. G. Routzahn, Director of the American Tuberculosis Exhibition of the National Association for the Study and Prevention of Tuberculosis.

Growing interest is manifest in the designing and construction of hygienic dwellings. Mr. W. G. Ross has issued a very helpful manual⁴ giving illustrations and plans of comparatively small but healthy homes.

¹ A full description of "The Anti-Tuberculosis War and the Red Cross Christmas Stamp" is contributed by Dr. Knopf to the *Boston Medical and Surgical Journal*, December 9, 1909.

² For full report see supplement of the *British Medical Journal*, November 20, 1909.

³ *The Survey*. Edited by Dr. Edward T. Devine. A Journal of Constructive Philanthropy. Published by the Charity Organization Society of the City of New York. 105, East Twenty-second Street. Annual subscription, \$2.00.

⁴ "Some Small Houses." By Walter Gray Ross. 33 full-page plates. London: W. G. Ross, 1, West Street, Finsbury Circus, E.C. Price 2s. 9d. post free.